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PROCTOLOGIC SURGERY OF THE LARGE BOWEL

Chairman's Address

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The hundredth anniversary of the birth of the American Medical Association provides adequate cause for celebration. Were it not for the undeniable progress that the physicians of this country have made through their achievements many people throughout the whole world would not have healthier, happier and longer lives today. The accomplishments of physicians and their co-workers have been the result of endless hours of study, sickness and sacrifice. Many of them unstintingly gave the best years of their lives and refused opportunities to sell their discoveries for fabulous remuneration. Their research developed better treatment and provided absolute cure to many sufferers.

The Section on Gastro-Enterology and Proctology, of which it is my distinguished honor to be chairman, was brought into existence by the efforts of such proctologists as Drs. Joseph M. Matthews of Louisville, Ky. (the first president of the American Proctologic Society); Dwight H. Murray of Syracuse, N.Y.; Louis J. Hirschman of Detroit; Alois B. Graham of Indianapolis; William M. Beach of Pittsburgh; J. Rawson Pennington of Chicago, and others. The gastroenterologists prominent in this section's definite establishment in 1917 at the New York meeting of the American Medical Association included Anthony Bassler of New York, Horace W. Soper of St. Louis, Frank Smithies of Chicago, Franklin W. White of Boston and Joseph Sailer of Philadelphia. These are but a few of the outstanding proctologists and gastroenterologists in this country who have elevated the status of their respective specialties and provided the real backbone for this present splendid section. Since its organization it has been the yearly custom to alternate the chairmanship between the proctologists and the gastroenterologists so that fifteen proctologists and fourteen gastroenterologists have served most creditably as chairman.

Because of the increased interest among the members of the American Medical Association in these two specialties during the past decade, their sectional meetings have become somewhat crowded, not only in members but in material wealth, with the result that it may be necessary in the near future to divide and create separate sections (in Gastro-enterology and Proctology).

Read before the Section on Gastro-Enterology and Proctology at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 12, 1947.

Were it not for the two great national societies, the American Gastro-Enterologic Association, which was founded fifty years ago and now comprises a membership of over two hundred, and the American Proctologic Society, which was born in 1899 and now has a roster of two hundred and fifty fellows and associates, this Section of the American Medical Association could never function. It is because of the members in these two outstanding organizations that the definite principles of the study, diagnosis and treatment of the various parts of the entire digestive system from OO (oral orifice) to AO (anal orifice) are so well presented.

Much progress has been made in the surgical technic of all specialties in the past few decades. In emphasizing proctologic surgery of the large bowel, it might be well to evaluate the changes in colon surgery during the last quarter of a century. It is interesting to note that in the constitution of the American Proctologic Society this science is defined as the "study, diagnosis and treatment of diseases of the anus, rectum and colon." For many years this organization has demanded general surgical training primarily, and when this training is combined with adequate proctologic instruction, a fellowship is obtainable.

Curiously enough, the word proctology comes from the Greek words Πρωκτός (proctos) meaning anus and λόγος (logos) meaning discourse, so that the original interpretation refers to a "discourse on the anus," although the scope of modern proctology has far exceeded this early designation.

Nevertheless, some members of the medical profession still seem to think that these medieval limits remain. It is known that all surgical specialties are the outgrowth of general surgery, which must be regarded as the parent stalk. With the progression of every specialty, so in proctology—surgeons became more interested in this field of activity, and because of their more intent study and the limitation of their work they became more adept in the treatment of proctologic disease. While the proctologist's superiority in his specialty is recognized and he deserves much praise, the parent has been most hesitant or loath to recognize its offspring or to admit that in certain respects the scion has surpassed the parent in fruition. Many of the older proctologists confined their efforts to diseases of the anorectal area, but the present personnel of the American Proctologic Society with few exceptions are colon trained and colon minded. They must be prepared to satisfactorily treat any surgical problem which may become apparent when the abdomen is opened. The anatomic structure of the terminal portion of the bowel is decidedly complicated and involved. Considerable study and practice is required in order to obtain the most satisfactory results without injuring

or destroying its muscular mechanism. I am not a believer in the short courses in proctology that are offered to physicians, because the instruction given is inadequate and leads the novice to believe that he can satisfactorily treat such pathologic conditions. As a means to broaden his diagnostic field and to aid in the correction of some of the minor conditions so frequently encountered, I believe it should prove beneficial to both physician and patient. My main objection to most of these attempts at cure is to the cursory methods employed to examine the area above the existing lesion. Frequently a poor history is taken, coupled with an inadequate physical examination. When the physician is cognizant of the fact that the area proximal to the anorectal or pectinate line (which is approximately 1½ inches, or 3.8 cm., from the anal orifice) is devoid of sensory nerve or pain fibers, then only will he realize that serious danger may lurk beyond the reach of the gloved finger and may require the use of the lighted sigmoidoscope or the opinion of the trained roentgenologist, who by the use of the double contrast barium-air enema may interpret factors not visible to the naked eye. Frequently several of these "roentgen seances" are necessary to determine the presence or show the absence of the various colonic lesions.

Unfortunately many surgeons are of the opinion that it is a simple matter to cure an extensive fistula in ano complicated by numerous tracts or properly to drain and cure some of the enormous abscesses so frequently encountered around the terminal area of the bowel. They fail to realize that such abscesses are part and parcel of associated fistulas, which were the primary cause of the purulent collections. Rectal prolapse, which is frequent in advanced hemorrhoidal disease, will often make the operative procedure an exceedingly tedious one, because absolute cure and proper function are mandatory. The pilonidal sinus (cyst) regarded so lightly by many wielders of the "aseptic scalpel" may prove extremely hazardous to the success of any surgeon if it has many associated ramifications. How many of these patients are given proper sigmoidoscopic examinations prior to surgical intervention, and what kind of postoperative care do they receive? Seldom should any of the aforementioned proctologic conditions require more than the initial operative procedure. To tell the patient that the condition has recurred is invariably an admission on the part of the surgeon that the first operative procedure was not properly performed. Unfortunately there are entirely too many physicians trying to do work for which they are inadequately prepared. To admit one's limitations in certain fields of surgical activity should be regarded as an asset, but it certainly is a liability to those who continue to do poorly the work which their colleagues can perform more proficiently. There have been many instances in which operation on some of the previously mentioned proctologic conditions entailed more difficulty than I might have encountered in performing some resection of the colon proper or a one stage Miles operation.

TABLE 1.—*Incidence Rates in Four Hundred and Forty-One Cases of Cancer of the Large Bowel, 1931-1946*

	Cases	
Age	No.	%
Under 20	2	0.4
20 to 30	4	0.7
30 to 40	18	4.0
40 to 50	67	15.0
50 to 60	120	27.0
60 to 70	168	38.0
Over 70	62	14.0
Total	441	
Sex:		
Male		56%
Female		44%
Nationality:		
American born		52%
Mid-European		37% (Amer.)
Hebrew		11%

TABLE 2.—*Location of Lesion*

	Cases	
	No.	%
Location * (large bowel)		
Retrorectal	3	0.7
Anus	13	3.0
Rectum (5 inches)	294	66.0
Rectosigmoid (5 to 10 inches)	93	21.0
Left side	27	6.0
Transverse	3	0.7
Right side	8	2.0
Total cases	441	

* Location of 69 per cent of lesions was determinable with the gloved finger. Biopsy specimens (416) were taken whenever possible.

TABLE 3.—*Earliest Symptom Noticed by Patient (Three Hundred and Four Cases)*

	1st	2d	3d	Initial %
Change from normal bowel habit	192	85	40	64
Bleeding	66	115	49	22
Tenesmus	21	75	128	7
Abdominal pains (cramplike)	15	11	2	5
Pains (local)	8	9	12	2
Mucus, flatus etc.	2	6	30	
Loss of weight	...	...	43	

TABLE 4.—*Time Interval (Fault of Patient) Between the Appearance of Earliest Symptoms and Medical Consultation*

Interval	No. of Patients
Under 3 mo.	20
3 to 6 mo.	25
6 to 9 mo.	65
9 to 12 mo.	52
Over 1 yr.	142
Definitely obtainable	304

All physicians remember those early days when a large majority of them, as "embryo doctors," expressed a desire to become surgeons or specialize in some particular branch of medicine. Time, lack of money, the establishment of a good general practice and ofttimes a large family prevented these practitioners from active participation in advanced study. Others less handicapped continued to pursue postgraduate work and when fully qualified were permitted to take Board Examinations for Certification. I have often wondered whether there would have been a higher percentage of first rate specialists from the former group, who did not have the opportunity to go on, than from those who were able to continue their postgraduate education. My own conclusion has been that every physician has a particularly important job to perform, whether he be a general practitioner or a specialist. Only from those who believe that they can always improve their diagnostic routine and better their methods of treatment may the best results be expected. In my contacts with the laity I have learned that the patient is often afraid—afraid of what the physician will tell him—and as a result he frequently puts off seeking medical advice

at all until it is too late to help him. Some conditions of the large bowel, to cite chronic nonspecific ulcerative colitis and the erroneously labeled spastic, or mucous, colitis as good examples, can be legitimately and profitably studied from the psychosomatic point of view. Surgical procedures may remedy the former condition, but an entirely different approach is necessary to cure the latter disease, because it calls for an understanding and appraisal of the patient's problems. Resourceful therapeutic measures can only be administered after one has gained the complete confidence of the patient. It is not unusual to acquire this when some good sensible advice and "plain speaking" by the consultant has been judiciously expressed. This does require time, but it gets results because it is the most important part of the entire treatment. I have never been impressed by those who omit this phase because they are "too busy."

Most proctologic diseases can be successfully treated. In regard to chronic ulcerative colitis and ileitis I would refer every one of you to those splendid papers

TABLE 5.—*Time Interval (Fault of Physician) from Consultation of General Practitioner Until Specialist (Surgical) Aid Was Urged*

Referred to Specialist	No. of Patients
At once	25
Less than 1 mo	8
1 to 3 mo	24
3 to 6 mo	62
Over 1 yr	70
Total	189
Sought direct consultation	105

Note: One patient consulted twelve physicians (one a prominent surgeon); the thirteenth, a general practitioner, finally made a digital examination and diagnosed a carcinoma of the rectum.

TABLE 6.—*Analysis of Diagnostic and Therapeutic Errors*

	Cases	
Nonsurgical		
Colitis	16	
Impaction	4	
Constipation	4	
Lumbago	1	
		25 cases
Surgical (operations performed)		
Hemorrhoids (injections included)	42	
Fissure and fistula in ano	16	
Trachelorrhaphy—hysterectomy (supravaginal)	13	
Prostate	3	
Hernia	1	
		75 cases
Total cases (erroneous diagnosis and treatment)		100 (22.7%)

submitted in the past year or two, in which analyses and treatments have been definitely outlined by proctologists and gastroenterologists alike. Cancer of the bowel usually offers its greatest problem in that the malignant growth has been permitted to advance too far in too many patients to permit of good prognosis. No one disputes the fact that a good surgeon with the aid of competent, trained assistants and experienced anesthetists cannot help but get the best results when performing colonic surgery, whether the malignant process is fairly well localized or even far advanced. Good percentages of cure and a low death rate can be readily assured if the surgeon draws a definite line on operability. Preoperative and postoperative care have been improved and modified so that today one can readily help those whose condition was regarded as hopeless fifteen years ago. While the truth still prevails, that the curability of cancer varies inversely with the duration of the disease, greater success in achieving surgical accessibility to all tumors has been experienced.

The symptomatology of cancer is being broadcast regularly to both lay and medical persons, but it is equally important that all become more cognizant of the precancerous period and give full support and aid

TABLE 7.—*Types of Treatment*

Consultation only		75
Surgical intervention advised and performed		249
Laparotomy (alone)	15	
Colostomy (only)	49	
One stage colostomy and extirpation (Miles)	113	
Two stage operation	21	
Colectomy (partial)	51	
Operation refused or inoperable		117
Total cases		441

TABLE 8.—*Analysis of Results of Treatment*

Cures (134 of 249)			Deaths (105 of 249)		
	No.	%		No.	%
5 years +	24	10	Within 24 hours	3	
3 to 5 years	46	18	Within 1 week	17	
Less than 3 years	64	26	Within 1 month	9	
			Within 6 months*	22	
	134	54	Within 1 year	18	
			Within 2 years	46	
				105	46

* One patient committed suicide.

to those groups endeavoring to detect lesions which may (without any apparent symptom) give proof that cancer is present or may shortly manifest early degenerative changes. It is to be hoped that the near future will bring some fairly simple test, so devised that any one exhibiting the slightest sign or symptom of early cancer may be properly screened and treated.

A summarization of data on 441 cases of cancer of the large bowel, in my private practice covering fifteen years, revealed (table 1) that 65 per cent were present between the ages of 50 and 70, slightly more frequent in men than in women, and (table 2) that 69 per cent were determinable with the gloved finger (if the digital

TABLE 9.—*Additional Observations on the Diagnosis and Treatment of Cancer of the Large Bowel*

The majority of patients received salves, soapsud enemas or suppositories as initial treatment.

In 294 rectal carcinomas roentgenologic study, including barium enema, was done in 50 cases (17%). (Digital examination alone was necessary for diagnosis.)

Inoperable cases (117) included those of 12 patients with factitial proctitis.

In earlier cases when grading of specimens for biopsy was done, grade 3 comprised 51%, with grades 2 and 4 each 23%.

In 2 of my own cases in which operative intervention for acute strangulated hemorrhoids and painful fissure was done, a barium enema (double contrast air) study later revealed a carcinoma of the colon (high up).

In carcinoma of the rectum complicated by arterial hypertension, 1 patient (blood pressure 220/110) is alive after twelve years (two stage operation).

(*a*) Diabetes mellitus: 10 patients (all died in 1 to 2 years).
(*b*) Tertiary syphilis (no gumma): 5 patients (all died).

examination was made to cover the distal 5 inches, or 12.7 cm.). Diverticulitis and polyposis both showed degenerative change (table 4) in 18 cases (4 per cent), but the figure for polyposis appears entirely too low because it is known that so many malignant growths have had their beginning in the apparently benign polyp. Change of bowel habit (table 3) was the earliest symptom obtainable from careful questioning of 304 patients, with the symptoms of bleeding and

tenesmus following. When change in bowel habit was the second or third symptom to appear it was superseded by the aforementioned symptomatology. The time interval between the appearance of the first symptom and medical consultation (table 4) was appalling. It indicates a great need for "jet propulsion" methods in cancer education among the laity. A better but not too wholesome record is evident in the length of the interval between the patient's application for medical advice and his referral for surgical consultation (table 5). In this regard the poor record was due in great measure (tables 6 and 7) to wrong diagnosis and treatment, accounting for error in almost 23 per cent of cases. It is indeed a reflection on the real status of the physician consulted, and he alone can correct this inexcusable calamity. I must emphasize the importance of initial proctologic examinations (including proper sigmoidoscopic study) prior to all barium study of the colon and the value of taking specimens for biopsy. Let the proctologist ever be cognizant of the fact that no matter how efficient or nationally prominent he may be, he is liable to make some honest mistakes.

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THE MASSACHUSETTS BLOOD AND BLOOD DERIVATIVES PROGRAM

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Blood and the various products obtained from blood are now recognized as essentials for good medical care. A tremendous increase in the use of both whole blood and plasma has resulted from the military and civilian medical experience of the last few years. This has placed a steadily growing burden on both the patient and the facilities which provide these products—the patient because of the sometimes staggering charges which often accumulate when quantities of blood or plasma now considered adequate are administered, and the medical service because of the growing difficulty in actually finding sources for the increasing requirements of these substances. The cost, in particular, becomes prohibitive to many patients, unless means are found to reduce the costs through increasing the number of voluntary blood donations, through centralizing the expensive operations of procurement and processing and through equalizing channels of distribution, so that local shortages of specific blood types or products of blood will not in themselves contribute to the costs of procurement.

Blood is a peculiar commodity that cannot be manufactured in a test tube but must be obtained from human donations. Ever since blood transfusion was begun it has been possible to find, with sufficient effort, enough voluntary donors to provide a significant proportion of the quantities which are needed, and, with the establishment of preserved blood banks some years ago, the utilization of such donations was made much more efficient. The collection of over 13,000,000 pints (6,151,000 liters) of blood, voluntarily donated, from our citizens by the American National Red Cross during the war showed that a tremendous reservoir of this fluid existed in the veins of the generous-minded people of this country, as was shown also in England, Canada, Australia, South Africa and elsewhere. In turn, many communities have organized community blood banks, serving the entire hospital group of a given area, with a resulting increase in the uniformity of the supply and the efficiency of procurement. However, even a community program fails to meet all the requirements of an ideal blood program, for it tends to serve best only those communities which are already best served in other ways, and it may prove inadequate to carry the loads imposed by unusual emergencies which a larger program could absorb. It was partly on account of these limitations that Michigan, North Dakota, Illinois, Vermont and other states undertook and successfully operated statewide plasma programs during the recent war years.

The Massachusetts Department of Health pioneered fifty years ago in the provision of diphtheria antitoxin without charge for the treatment of any patient for whom a physician felt that such treatment was required. The therapeutic results and the consequent economic saving were salutary and have abundantly justified the institution of such a project and such a policy. The Massachusetts Department of Public Health, in accordance with this policy, investigated three years ago the desirability of establishing a statewide blood plasma program. Consultation was obtained with the medical society and hospital leaders and clinical and laboratory authorities, and a survey of the current requirements for blood and plasma was carried out through the Massachusetts Hospital Association. It was concluded that a statewide program was desirable, provided it met the following objectives: (1) The program should make available not only blood plasma, but preserved whole blood, red cells, and the various fractions of plasma—thus assuring the supply of all the derivatives of blood for which a need exists and insuring the most economic use of each unit of blood procured, and (2) the program should make these products available with equal facility to all communities and individuals in the state, irrespective of geographic or financial considerations.

Such a program was made possible with the appropriation of a sum set aside by the legislature for this purpose in July 1945. Since that time, the program has gotten under way and has, with certain important limitations, begun to meet the objectives as originally outlined. The Massachusetts Blood Program may be considered unique in that it is the first comprehensive statewide blood program in operation. Other states have undertaken the provision of blood plasma, and some counties and cities have developed whole blood banks, but none has a program which includes processing and distribution of whole blood, red blood cells, blood plasma and the fractions of blood plasma without charge.

The aim of the Massachusetts Blood Program is to provide all the blood and blood products required by the residents of the commonwealth. No charge is to be made for any of the products, regardless of the financial status of the recipient. However, hospitals or physicians may make the usual administration

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charge. The experience gained from this program may therefore be of especial interest in the light that it may shed on the accomplishments of such a program and some of the problems which must be met.

A statewide program of this type is particularly beneficial to the small hospitals that use a small amount of whole blood. Many such hospitals are not equipped or staffed to operate blood banks, and to do so would entail a large expenditure of funds. With blood available at subdepots in neighboring hospitals, the small hospitals have only to do blood grouping and Rh typing, obtain blood from the subdepot, and cross match before giving the transfusion. Blood supplied in this manner may prove the difference between life and death, since considerable time is required to locate a donor, type, cross match and bleed to provide blood in an emergency.

Public health, medical and hospital authorities in Massachusetts realized that the stimulus derived from the use of blood and blood products in the armed forces would be reflected in civilian medical practice after the war; also, that the American public was well aware of the virtues of and needs for blood and blood products for general public use, because of the extensive education derived from the blood procurement program established during the war by the armed forces and the American Red Cross.

As early as 1937, the American Red Cross authorized a few selected chapters to carry on an experiment in the enrolment of volunteer blood donors to be available on calls from hospitals and physicians for blood donations free of charge to those not able to pay for them. Subsequently the Red Cross participated through its local chapters in developing community blood and plasma bank services and, on a national scale, in the gigantic wartime blood procurement program. Toward the end of the war this experience had led to a widespread demand that the Red Cross render a similar service to the civilian population. On the advice of numerous professional groups and with the guidance of a distinguished expert advisory committee, the American National Red Cross approved participation of chapters in civilian blood programs on a far broader basis. Several significant provisions were set up—chiefly that the program be sponsored by a reliable medical or health agency which was to be responsible for the technical operations; that the Red Cross be responsible only for enrolment of donors and nontechnical aid; that the program be acceptable to the medical profession in the community, and that no charge be made to physicians, hospitals, clinics or patients for the products made available through such a program. On the basis of these requirements established by the American National Red Cross, the Massachusetts Department of Public Health proceeded to develop a plan for a statewide blood program.

Briefly, the plan for the Massachusetts Blood Program is to collect blood from volunteers in all communities. This is done by a "bloodmobile" visiting communities on a prearranged schedule. The "bloodmobile" staff consists of a physician, five nurses, a medical technician, a blood custodian and a truck driver. The unit carries all technical equipment required in the clinic. The physician is responsible for the operation of the clinic and the selection and care of donors. The nurses do the actual bleeding under the supervision of the physician and assist the physician in selecting donors by medical history. The medical technician determines the hemoglobin, blood group and Rh factor of each donor. The blood custodian is charged with the care, refrigeration and storage of the bloods collected and with seeing that the bloods are delivered to the central laboratory each night. The truck driver not only drives the truck that carries the equipment but assists in setting up and breaking down the clinic; he also assists generally in the operation of the clinic.

Donors are recruited locally by the chapters of the American Red Cross. The successful recruitment of donors demands continuous and well organized local publicity. Various social, fraternal and civic organizations and groups must be interested in the program, and through their participation the members of the organization are acquainted with the program and as residents of the community actively engage the community in the program. The Red Cross chapters also provide the place for the clinic and provide nontechnical equipment and personnel for the operation of the clinic. The space for a six bed clinic requires a minimum of 1,500 square feet (139.35 square meters). This may be a single room divided by curtains or screens into a registration room, 500 square feet (46.45 square meters); a donation room, 500 square feet; a recovery room, 100 square feet (9.29 square meters), and a canteen, 400 square feet (37.16 square meters); or connecting rooms of adequate size may be used. Kitchen facilities to provide a light lunch for donors after donations should be available. Rest room facilities and utilities for the immediate washing of needles, tubing and other equipment must be available. American Red Cross staff assistants, gray ladies, nurses' aides, canteen personnel and motor corps personnel comprise the nontechnical personnel required.

At the start, the Massachusetts Blood Program was divided into three phases. The first was to procure bloods for the preparation of blood plasma. However, the abrupt ending of the war and the return of the surplus armed forces plasma to state health departments provided a sufficient amount of plasma to meet the present needs. The second phase of the program was to collect blood to be used for fractionation. Fractionation would provide antihemophilic globulin, thrombin and fibrinogen for the preparation of fibrin films and fibrin foams, blood-grouping globulins and anti-Rh typing serum, immune serum globulins and salt-poor albumin. The third phase, so placed because of the many technical difficulties to be encountered in distribution and storage, was to provide whole blood.

Because of the highly technical nature of processing and distributing blood and blood products, it was necessary to provide a special addition to the Massachusetts Department of Public Health Division of Biologic Laboratories building. Many delays were encountered in construction and procurement of equipment. The blood collection program actually began on Dec. 3, 1945, and moderate scale fractionation began approximately ten months later, on Oct, 15, 1946. Because of the delay in obtaining equipment for fractionation and the procurement of a fair supply of whole blood, it was decided to begin limited distribution of whole blood in September 1946. The institution of this third phase provided a means of working out some of the technical problems of distribution of whole blood.

From the inauguration of the program, on Dec. 3, 1945, to May 31, 1947, the "bloodmobile" has visited 153 communities to hold 236 clinics. During this

period 19,204 blood donors have been registered; 2,828 have been rejected for one reason or another, and 297 persons having rare blood groups or Rh-negative blood have remained on call as volunteer donors in the community. A total of 81 bloods have been sent from the clinic directly to local hospitals for emergency use, and 15,990 bloods have been returned to the central laboratory for processing.

Table 1.—*Use of Blood and Blood Plasma in Massachusetts Hospitals, 1943*

Hospital Group	Number	Total Beds	Units of Plasma and Blood Used: Blood 500 Cc. Total	Blood 500 Cc. Per Bed	Plasma 250 Cc. Total	Plasma 250 Cc. Per Bed
Blood bank	27	8,540	17,482	2.05	4,780	0.56
Plasma bank	16	1,286	953	0.74	1,039	0.81
Nearby bank	30	2,385	1,452	0.61	1,792	0.76
No facilities	20	2,610	697	0.26	942	0.36
Total	94	14,821	20,584	....	8,553	....
Average				1.4		0.58

Of the 15,990 bloods delivered to the laboratory, 314 were rejected as not suitable for whole blood or for processing to blood plasma or fractions. Of the remainder, 8,195 have been processed to whole bloods, 274 have been made into plasma and 7,204 have been used for fractionation.

One of the most interesting phases of this program has been the noticeable increase in the use of blood and blood plasma. A sufficient stock pile of plasma fractions has not yet been accumulated to allow general distribution of fractions on a large scale, and fractions have been used in only a limited way for clinical trials.

Table 1 gives the results of a survey of Massachusetts hospitals in 1944 and shows that the 94 hospitals replying to the questionnaire and having a total bed capacity of 14,821 used a total of 20,584 standard 500 cc. units of blood for an average of 1.4 units of blood per hospital bed per year in 1943. During the same period, these hospitals used 8,553 small, or 250 cc., units of blood plasma for an average of 0.58 unit of plasma per hospital bed per year.

Table 2.—*Blood and Blood Plasma Used in Massachusetts Hospitals; Hospital Survey for 1946 (Public Health Districts)*

	Hospitals Reporting	Total Beds	Blood Banks	No Banks	Uses — 1946: Blood	Plasma 500 Cc.	Plasma 250 Cc.
District I	6	946	2	4	942	831	134
District II	9	737	3	6	1,078	223	280
District III	33	4,848	11	22	20,112	2,308	1,680
District IV	10	853	3	7	1,415	789	61
District V	7	693	1	6	1,421	913	315
District VI	4	603	2	2	1,148	583	...
District VII	7	709	..	7	743	622	177
District VIII	2	198	1	1	206	271	...
Totals	78	9,587	23	55	27,065	6,540	2,647

Early in 1947 questionnaires were sent out to all hospitals in the commonwealth, and replies have been received from 78 hospitals having a total of 9,587 beds, as shown in table 2. These hospitals used 27,065 standard 500 cc. units of whole blood, for an average of 2.8 units of blood per hospital bed per year for 1946. The use of plasma also increased, and the hospitals report the use of 6,540 large, or 500 cc., units of plasma, for an average of 0.6 unit per hospital bed per year, and 2,647 small, or 250 cc., units of plasma to give an average of 0.27 unit per hospital bed per year. The combined total of plasma is equivalent to the use of 15,727 small, or 250 cc., units of plasma or 1.6 of these units per bed per year.

The hospitals reporting on this survey estimated the 1947 requirements for blood and plasma. The 78 hospitals estimated 33,173 bloods would be required for 1947, or an average of 3.4 standard 500 cc. units of whole blood per hospital bed per year. It is expected that 8,825 standard 500 cc. units of plasma will be used, for an average of 0.9 unit per hospital bed per year, and 2,634 small, or 250 cc., units, for an average of 0.27 unit per hospital bed per year. In terms of 250 cc. plasma units, this represents an average of 2.1 units per bed per year.

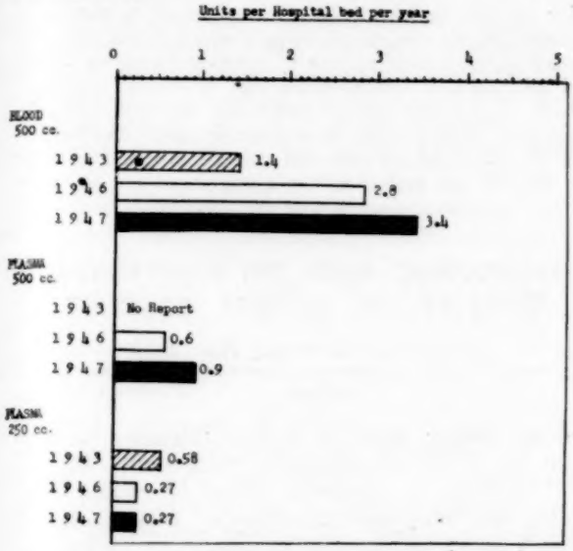
The use of blood for the years 1943 and 1946 and the anticipated needs for 1947 are summarized in table 3. Because very few 500 cc. plasma units were used in 1943, all units were reduced to the 250 cc. unit size. However, with the return of the surplus armed forces plasma and subsequent distribution to all hospitals in the commonwealth in March 1946, the use of double size plasma units has increased. There is an increase of 6,481 in the use of blood during 1946 over 1943, and in 1947 the estimated increase is 6,108 over 1946. The increase in the use of plasma is not so great and stresses the increased use of whole blood with a relative decrease in the use of plasma. The chart presents the graphic picture of the increased use of blood and blood plasma during 1943 and 1946, with the estimated amounts required in 1947 by the Massachusetts hospitals replying to the questionnaire.

Table 3.—*Amount of Blood and Blood Plasma Used in Massachusetts Hospitals in 1943 and 1946; Estimated Uses, 1947; Consolidated Data from Hospital Surveys*

Year	Hospitals Reporting	Total Beds	Units of Blood and Plasma Used: Blood, 500 Cc. Total	Blood, 500 Cc. Per Bed, Aver.	Plasma 500 Cc. Total	Plasma 500 Cc. Per Bed, Aver.	Plasma 250 Cc. Total	Plasma 250 Cc. Per Bed, Aver.
1943	94	14,821	20,584	1.4	.....	...	8,553	0.58
1946	78	9,587	27,065	2.8	6,540	0.6	2,647	0.27
1947	78	9,587	33,173	3.4	8,825	0.9	2,634	0.27

To meet the blood and blood products needs, it is necessary to consider the number of bloods required to produce the products to be distributed. Also, consideration must be given to the donors required to meet these needs. For every group of donors recruited for donation, there are rejections because of acute colds, low hemoglobin levels, a history of jaundice and other causes. Those rejected plus those that fail to keep the appointment will average about 25 per cent. Of all bloods collected, an average of 10 per cent cannot be used for whole blood, but most of these can be used for fractionation. Bloods from a donor with a history of malaria or a tour of duty in malarious areas without a known attack of malaria cannot be used for whole blood but can be used for fractionation. Bleeding difficulties sometimes cause a short bleeding, and such bloods must be used for fractionation.

In table 4 the blood requirements for the year 1947 are given. These results are based on the total hospital beds in the hospitals of the commonwealth as of March 1, 1946. The state and county hospitals are not included in this table, since many of these institutions use little blood or blood products and have a large bed capacity.



Comparison of use of blood and blood products in Massachusetts hospitals in 1943, 1946 and 1947; the data are from hospital surveys.

The hospitals in the state of Massachusetts have a total of 21,312 hospital beds. Using the 1947 estimated figure of 3.4 units of blood per hospital bed per year shows that 72,460 usable 500 cc. units of whole blood will be required. To provide 500 cc. units of plasma, it will require 47,950 bloods, since 2.5 usable 500 cc. units of whole blood are required to provide a 500 cc. unit of plasma. Likewise, it will require 5,328 usable 500 cc. units of blood to provide the required number of 250 cc. units of plasma. Salt-poor albumin has not been available for unlimited civilian hospital use, and the quantity of salt-poor albumin must be estimated. It must be stressed that this estimate is without actual experience tables. Since it requires 4 usable 500 cc. units of whole blood to make a single 100 cc. unit of 25 per cent albumin, albumin demands being estimated to be equal to or greater than the plasma estimate for 1947, this assumes a demand for the maximum predicted plasma needs and an additional equivalent of albumin needs for unforeseen purposes such as nephrosis, eclampsia and emergency shock treatment. Disregarding the probability that use of blood and plasma may recede, since there is at present considerable waste, it is estimated that 93,768 usable 500 cc. units of whole blood are required to meet the estimated needs for albumin. From these totals, it can be seen that 219,506 usable whole bloods are required if the estimated hospital needs for whole blood, plasma and fractions are to be met in 1947.

With two "bloodmobiles" operating each day, five days per week, each unit staffed and equipped to collect 100 to 125 bloods per day, approximately 50,000 bloods can be collected. This will not meet the estimated needs for whole blood for the year 1947. Before adding additional collection units, the response of the residents of Massachusetts must be ascertained to be sure that they will donate the bloods required for the estimated needs of the coming year.

In order that the donor and the immediate members of the donor's family may be protected for blood needs for one year with a limited supply of blood, it has been necessary, for the time being, to limit blood for use of donors and immediate families except in genuine medical or surgical emergencies. Supplies distributed to hospital blood banks are used for nondonors and are replaced by bleeding at the hospital blood banks or at the mobile unit when it next visits the community or is in a neighboring community. The restriction of blood for donors and immediate families should increase donations of blood, for many families desire the protection for their blood needs just as they desire the protection of the Blue Cross or Blue Shield. Also, bloods are obtained from many that would not otherwise donate if all blood needs were provided without requiring a donation of blood. It is believed that donations of blood will eventually be sufficient to meet all needs without any restrictions on the use, but in contemplating or planning for this it is stressed that any blood program must be set up so that when there is a decrease in donations a means is readily available to limit the use of donated blood. This limitation then stimulates the incentive for individuals to participate in the program and thus provide more blood. Also, this stimulus may be obtained by making a small charge for the blood or by strict use of blood for the donor's protection only.

Whether sufficient "bloodmobiles" and personnel are provided to collect all bloods required or not, it is most essential that all hospitals operating blood banks should continue to collect bloods whenever possible. An established hospital blood bank has adequate facilities to store, check and distribute whole blood and blood products. The use of such blood banks as subdepots provides a means for distributing these products to neighboring hospitals that lack these necessary facilities. The responsibility for the administration of the proper blood group and Rh type blood to a recipient remains with the physician, although the actual technical work may be delegated to the hospital laboratory or blood bank. Again, the hospital blood bank may play an important role in the program by collecting blood from volunteer donors between "bloodmobile" visits to the community and also blood as replacements for that used for nondonors. The actual participation of hospitals and physicians in the program, along with residents of the community, insures a cooperative community program which aids materially in insuring complete community participation.

TABLE 4.—*Massachusetts Blood Requirements, 1947, Based on Hospitals Reporting, Exclusive of State and County Hospitals*

Product	Hospitals	Total Beds	Units per Bed per Year	Bloods to Provide	Usable Whole Bloods Required, Units
Blood	184	21,312	3.4	1	72,460
Plasma					
500 cc.	184	21,312	0.9	2.5	47,950
250 cc.	...	.....	0.2	1.25	5,328
Albumin (estimated)	184	21,312	?	4.0	93,768
Total					219,506

ABSTRACT OF DISCUSSION

DR. I. JAY BRIGHTMAN, Albany, N. Y.: In New York state we are also attempting to get a blood program under way. We are doing it somewhat differently from Massachusetts. Our plan is for an entirely decentralized type of program. Geographically, we are about three times the size of Massachusetts and a centralized program would be most difficult to manage. Also, we are operating on a state aid to community basis; the state is providing financial aid, but the community is responsible for 50 per cent of the cost of operation. In surveying the New York state hospitals we found that a state program was definitely indicated, partly because many hospitals had poor facilities for making blood readily available and partly because of low standards governing laboratory and clinical procedures in some hospitals operating blood banks. As an example of the latter, we found one hospital running as high as six blood transfusions per hospital bed per year. Their record of reactions was almost nil, which was surprising until the record and supervision systems were received. Obviously, if you keep no records and maintain no medical supervision, you will have no reactions to show. I should like to mention the high incidence of homologous serum jaundice which we are encountering in New York state. We know from other reports that there is a significant amount of jaundice following the administration of pooled plasma, far beyond that following whole blood transfusion. This is apparently due to the pooling of plasma with greater dissemination of the virus. We made a follow-up study of recipients of pooled plasma and found the incidence of jaundice to vary from 3 to 5 per cent. We have encountered some deaths. These findings call for education in the field of transfusion therapy, so that pooled plasma may be administered only when absolutely indicated. I have had the opportunity of visiting the Massachusetts laboratory and of observing the work of Dr. Moore and his associates. I believe that they are blazing a trail in this new field of public health and are to be congratulated.

DR. CLAUDE P. BROWN, Philadelphia: I should like to know the probable cost for 1947 of such a program as Massachusetts has.

DR. J. W. MOUNTIN, Washington, D. C.: I should like to ask: 1. How is the Massachusetts program to be articulated with that being developed by the Red Cross? 2. What has been your experience in getting donors; is the problem difficult and what inducements do you offer? 3. Is the processing done directly by the State Health Department or under contractual arrangements with other agencies?

DR. LOREN D. MOORE, Boston: We are having a similar experience with the use of plasma in the development of jaundice, and it is reaching a point where many of the hospitals are scarcely using plasma at all, but are using blood. A number of hospitals operating large scale blood banks are now using individual bleedings of plasma, by that method administering typed plasma to eliminate the hazard of jaundice. This is not a feasible program on a statewide basis, but it is something that we must consider. If the indications continue, the use of albumin will, I think, definitely replace that of plasma. So far the indications are that the jaundice virus is not carried over in the fractionation process, and we have a stable product without the hazard of transmitting the virus. Another great factor in favor of the albumin is that it is a small unit, can be carried in a physician's bag and can be administered readily at any place, and is very stable at ordinary temperatures. It is costing us now about $2 to $3 to collect blood in the field. That is high because our units are not operating 100 per cent every day. If our units could operate and collect 200 to 250 units a day, our cost would be definitely below $2 a unit. I cannot give you any definite cost figures on the plant operation. As to Dr. Mountin's questions, let's take the third question first. The work is all done in one central laboratory operated by the Department of Public Health. It is part of the Division of Biologic Laboratories. Getting donors is a problem. Our percentage of repeat donors is, I should say, about 75 per cent. That is not good. We want new donors, and we want to do blood grouping and Rh typing eventually on the entire population of the commonwealth. We are now increasing our number of new donations.

DR. MOUNTIN: The relationship of the Red Cross—I think that you refer to the national program that the Red Cross has been investigating.

DR. MOORE: Yes, that is it. We have no connection, of course, with that. If that program goes through, it will be a number of years before it actually engages all of the states in the United States, and we are going ahead with our program just as though there were no talk of a national program. Just how we will fit into that program has, of course, not been determined. No doubt our laboratory will be used, probably for processing blood for the New England area. We believe that our plant will be used for the over-all program in some manner, and for that reason we are going ahead.

THE PHYSIOLOGIC BASIS OF MENSTRUATION: A SUMMARY OF CURRENT CONCEPTS

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The physiologic basis of uterine bleeding in primates is a subject of perennial discussion. In this article I propose to present a series of related facts pertaining to menstruation. Some of these facts are so recently acquired that it is impossible to incorporate them with certainty in the older views of the subject. This amounts to saying that new discoveries remain to be made.

The physiologist recognizes that the first step in the explanation of menstrual mechanisms is an understanding of the morphologic characteristics of that part of the peripheral vascular tree which undergoes the menstrual process. This is particularly true today, since newer knowledge of a histologic nature makes it necessary to revise and enlarge the existing ideas concerning menstruation. On one hand Danish workers, notably Okkels and his students Schlegel and Dalgaard, have recently demonstrated in the human endometrium the probable presence of numerous arteriovenous anastomoses (Okkels, 1947;[1] Schlegel, 1945-1946;[2] Dalgaard, 1946[3]). On the other hand Kaiser, studying in the Carnegie laboratory, has noted that certain New World monkeys are lacking in endometrial coiled arterioles in the endometrium at all times of the menstrual cycle (Kaiser, 1947[4]). Since these monkeys do menstruate, it is clear that the basic mechanisms of menstruation are not dependent on the highly specialized structures of spiral arterioles and arteriovenous anastomoses. More will be said of this later.

Until now it has been the fashion to dwell on the coiled, or spiral, arterioles in the endometrium. For orientation, the vascular pattern in the uterus may be compared with the components of the peripheral vascular tree in other parts of the body. These are shown schematically in figures 1 and 2, respectively.

Read in a panel discussion on "Gynecologic Bleeding" before the Section on Obstetrics and Gynecology at the Ninety-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 11, 1947.

1. Okkels, H.: Histophysiology of Endometrial Blood Vessels, in Engle, E. T.: Proceedings of the Conference on Menstrual Diseases, Princeton, Princeton University Press, 1947, to be published.
2. Schlegel, J. V.: Arterio-Venous Anastomoses in the Endometrium in Man, Acta anat. **1**: 1285, 1945-1946.
3. Dalgaard, J. B.: The Blood Vessels of the Human Endometrium: A Histological Study by Means of Injection and Blood Corpuscle Colouration, Acta obst. et gynec. Scandinav. **26**: 342, 1946.
4. Kaiser, I. H.: Absence of Spiral Arterioles in the Endometrium of Menstruating Platyrrhine Monkeys, Anat. Rec., November 1947, to be published.

In figure 1 the essential features of the peripheral vascular tree in somatic tissues in general are shown (after Zweifach and Shorr [5]). Arterioles, having muscular elements, arise from terminal arteries. The arterioles give rise to three types of vessels, namely, dichotomous branches of arterioles, precapillary arterioles with contractile elements and arteriovenous anastomoses.

In figure 2 are seen the specialized structures which have been described as existing within the human uterus. The myometrium contains the principal arterial and venous supply. The arcuate arteries in the vascular zone give rise to terminal arteries supplying the outer third of the myometrium. The inner two thirds of the myometrium is supplied by branches from the radiate arteries as these pass toward the endometrium. In the endometrium the radiate arteries continue as spiral, or coiled, arterioles. The basalis of the endometrium is supplied by endometrial basilar arterioles, which divide once dichotomously and end in a rich capillary network. The functionalis is supplied by the spiral arterioles. These give rise to few branches until their terminal branching.

When one compares the structural features of the somatic peripheral vascular tree with that in the human uterus, one sees many features in common. The principal differences lie in the presence in the premenstrual human uterus of many supposed arteriovenous anastomoses, numerous endometrial coiled arterioles and extensive, subepithelial, venous and capillary lakes.

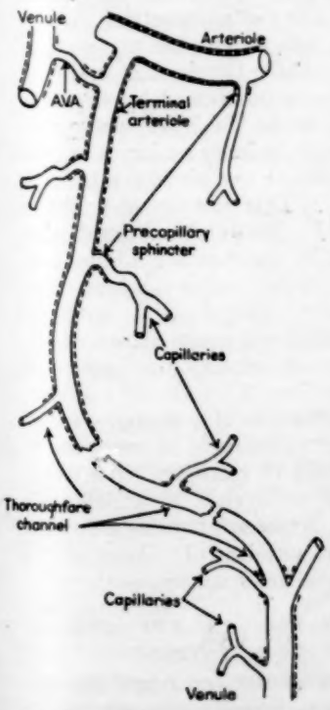

Fig. 1.—Schematic representation of the principal blood vascular elements in the general somatic circulation. Contractile elements are indicated by broken lines. Note contractile elements about precapillary vessels and the arteriovenous anastomoses (A.V.A.). After Zweifach and Shorr.[5]

Of equal importance with the vascular architecture is the seldom emphasized fact that the tissue in which these structures lie is loose and spongy. The vascular elements appear to be developed out of all proportion to the immediate metabolic requirements of such tissue. It is most likely that the vascular arrangement in the endometrium is adapted, as Hasner (1946) [6] has emphasized, to supplying rapidly the placental villi of an invading trophoblast when an ovum begins to become implanted. When a trophoblast fails to develop, however, this complex vascular structure breaks down. It cannot be maintained in the face of the requirements of cyclic endocrine activity, in which ovulation is normally the key point in the pattern. Menstruation will take place, it is true, in anovulatory cycles as is now generally recognized. This is a common occurrence in rhesus, although it is regarded as being uncommon in women during the period of maximum fertility. In either case, however, observations of Daron (1936) [7] show that the sequence of events is the same. The

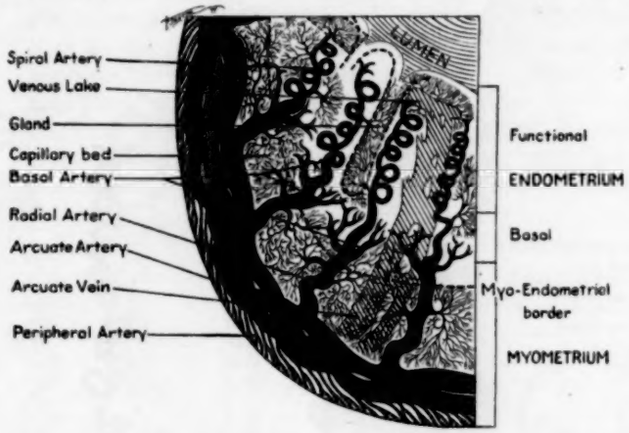

Fig. 2.—Schematic representation of the specialized vascular elements in the human uterus. Note different vascular elements supplying the myometrium, the basal and the functional layers of the endometrium. Based on summary of the literature and illustration of it by Schlegel (1945-1946) [2] and by Okkels and Engle (1938).[11] Note alleged arteriovenous anastomoses into the subepithelial venous lake.

degree of vascular development is much less, however, when a cycle is anovulatory than it is when ovulation and development of a corpus luteum takes place. This has been affirmed in recent studies by Markee (1940) [8] and Kaiser (1947).[9] In either event the demands of cyclic endocrine activity impose the necessity of tearing down the vascular bed in the spongiosa if it cannot fulfil its predestined function of supplying a trophoblast. It is the reason for, and consequence of, this collapse that is of concern here.

VASCULAR PATTERNS AND THE MENSTRUAL CYCLE

The essential features of the vascular architecture of the human uterus during the menstrual cycle are shown in figure 3. In brief, it may be noted that these are as follows:

During the proliferative phase, one finds that (*a*) there are few coils in the endometrial arterioles and these tend to be restricted to the lower portion of the functional zone; (*b*) collecting veins are very small; (*c*) arteriovenous anastomoses, according to Schlegel (1945-1946),[2] are few, and (*d*) the endometrial glands are straight and proliferating.

During the secretory phase, one finds that (*a*) the coils in the spiral arterioles have increased in number, and they may extend to the upper portion of the functional endometrium; (*b*) collecting venules have increased decidedly in number, especially in the upper portion of the functionalis; (*c*) arteriovenous anastomoses are stated to have increased in number, and (*d*) glands are coiled and secretory, with a rich capillary network about them.

Premenstrually, one finds that (*a*) the spiral arterioles are coiled extensively toward the subepithelial capillary bed, and there are numerous venous and capillary lakes in the subepithelial layer of the endo-

5. Zweifach, B. W., and Shorr, E.: Hormonal Factors on Blood Flow and Arteriolar Activity, in Engle, E. T.: Proceedings of the Conference on Menstrual Disorders, Princeton, Princeton University Press, to be published.

6. Hasner, E.: Endometriets Vasculare Cyklus, Thesis, Copenhagen, Det Berlingske Bogtrykeri, 1946.

7. Daron, G. H.: Arterial Pattern of the Tunica Mucosa of the Uterus in Macacus Rhesus, Am. J. Anat. **58**: 349, 1936.

8. Markee, J. E.: Menstruation in Intraocular Endometrial Transplants in the Rhesus Monkey, Contrib. Embryol. **28**: 219, 1940.

9. Kaiser, I. H.: Histological Appearance of Spiral Arterioles in the Endometrium of Chimpanzee, Baboon, Gibbon, and Rhesus Monkey, Anat. Rec., to be published.

metrium; (*b*) arteriovenous anastomoses are said by Schlegel to be numerous in the vicinity of the terminal branches of the endometrial coiled arterioles; (*c*) collecting veins are of maximum size and number, and (*d*) the capillary bed under the endometrial epithelium is extensive and in general lies with the vessels parallel to the surface.

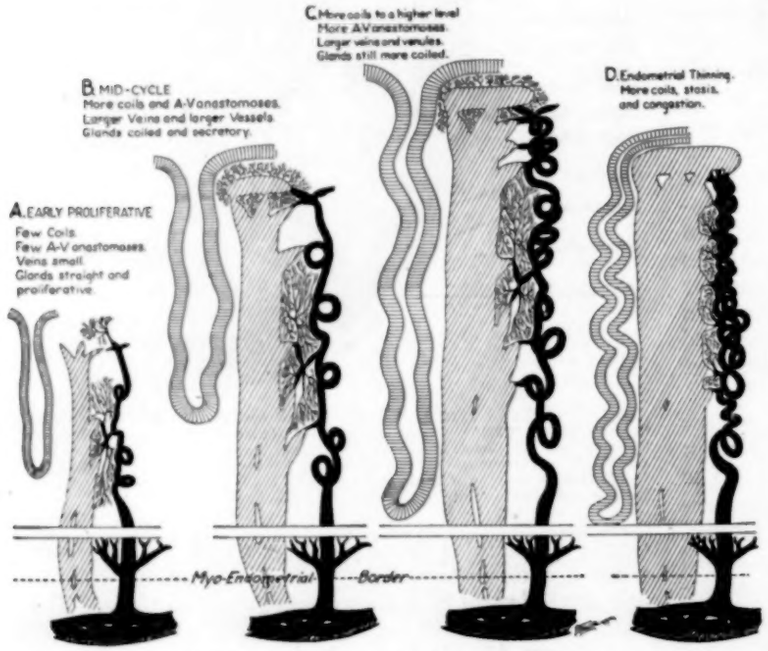

Fig. 3.—Schematic representation of the development throughout the menstrual cycle of an endometrial spiral, or coiled, arteriole, collecting veins, subepithelial venous lakes and arteriovenous anastomoses described by Schlegel. The basal endometrium, which remains relatively unaffected, is indicated below the break in continuity of the endometrium. Based on descriptive data of Schlegel (1945-46),[8] Markee (1946)[10] and Daron (1936).[7]

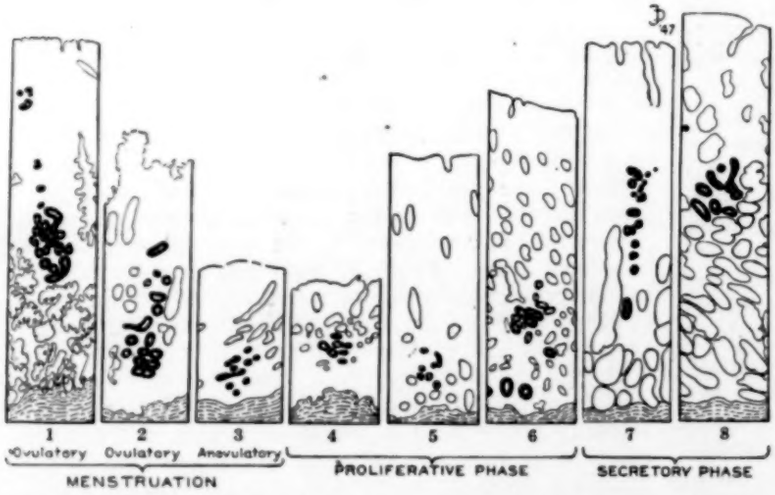

Fig. 4.—Line drawings showing location of endometrial glands and arterioles seen in sections of the endometrial rhesus monkeys. Reduced from camera lucida drawings by Kaiser at a magnification of 25 diameters: (1) first day of menstruation in an ovulatory cycle; (2) second day of menstruation; (3) second day of menstruation in an anovulatory cycle; (4) and (5) early and late proliferative phase; (6) premenstrual endometrium in an anovulatory cycle; (7) midsecretory phase, and (8) premenstrual endometrium, ovulatory cycle.

CYCLIC PHENOMENA AND HORMONAL FACTORS

The relation of cyclic phenomena in the uterus to hormonal factors is a point which has been so frequently and adequately discussed that it will not be treated at length here. It will suffice to indicate this schematically in figure 6. This drawing is based on a similar diagram by Markee (1946). The blood levels and sources of estrogen and progesterone in the blood are shown.[10] The first half of the cycle is associated with rapid growth of the uterine vascular elements under the influence of estrogen. It is a period of tissue repair and proliferation. The groundwork is laid by an increase in the spongy layer of the endometrium for increased coiling of the spiral arterioles later. However, the latter half of the cycle is characterized by secretory activity of the glands and extensive elaboration of the vascular elements that develop in the middle and superficial layers of the endometrium under the influence of estrogen and progesterone, as shown in figure 6.

DEPENDENCE OF UTERINE BLOOD VESSELS ON THE OVARIAN HORMONES

The dependence of the uterine blood vessels on ovarian hormones is a point which requires no elaboration to clinicians. There is a publication by Okkels and Engle (1938),[11] however, which should be familiar to all who are concerned with the problems of menstruation. In short, these investigators have shown that not all uterine blood vessels are equally affected by deprivation of ovarian hormones.

In monkeys extensive fibroelastoid (hyaline) degeneration occurs in response to spaying. The spiral arterioles are much affected, as also are the myometrial radiate arteries and to a less extent the myometrial arcuate arteries. Only the basilar endometrial arteries remain unaffected by deprivation of estrogen, as do the blood vessels in most other parts of the body as far as is now known. These effects are shown schematically in figure 5. This picture also shows that fibroelastoid (hyaline) degeneration may be repaired by appropriate administration of estrogen. Repair requires a long time. Progesterone administered with estrogen has no special effect on maintenance of the fibroelastic tissues of the vascular apparatus in the uterus.

The degenerative vascular changes which have just been described are in response to extreme deprivation of estrogen. Menstruation is the result of a shift in a delicately adjusted balance between growth-promoting stimuli and their withdrawal. What is the nature of these changes?

FUNCTIONAL CHANGES IN THE ENDOMETRIUM DURING MENSTRUATION

The discussion of the functional changes in the endometrium during menstruation will be confined to two points, first, the train of physiologic conditions which leads to menstruation and second, the consequences of a chemical nature in uterine tissues which take place concurrently. Markee (1940)[8] is the primary source of knowledge of the former and Smith and Smith (1947),[12] of the latter. With respect to both points, it is now clear that although the stimulus

10. Markee, J. E.: Morphological and Endocrine Basis for Menstrual Bleeding: Progress in Gynecology, New York, Grune & Stratton, Inc., 1946, p. 37.

11. Okkels, H., and Engle, E. T.: Studies on the Finer Structure of the Uterine Blood Vessels of the Macacus Monkey, Acta path. et microbiol. Scandinav. **15**: 150, 1938.

for growth of uterine blood vessels is blood-borne, the control of menstruation is local.

Markee has advanced the view now widely held that menstruation in the primate uterus takes place whenever there is a period of rapid and sufficiently long regression or thinning of the endometrium. Withdrawal of the stimulus for uterine growth provided by estrogen and progesterone leads to such regression. Rapid regression of the endometrium gives rise to a series of changes prior to, and essential for, menstruation. This involves:

(*a*) Thinning of the mucosa. This is largely attributable to loss of water from the spongiosa.

(*b*) Increased coiling of the spiral vessels. As many as twenty new coils in each arteriole may appear at this juncture, as the elastic elements of the arterioles become shortened when the endometrium becomes thinner.

(*c*) Dilatation of coiled arterioles.

(*d*) Leukocytic infiltration of adjacent tissues and edema in subepithelial tissues.

(*e*) Local necrosis.

(*f*) Local production of a substance which causes intense vasoconstriction of the endometrial blood vessels. This was shown by Markee (1940)[8] who employed endometrial transplants of the monkey into the anterior chamber of the eye. He observed that when there was intense local constriction of the blood vessels in the transplants there was at the same time dilatation of the blood vessels in adjacent parts of the eye. From a variety of such experiments the facts of premenstrual regression (thinning), stasis and localized vasoconstriction have been established.

(*g*) Formation of subepithelial hematomas locally in the endometrium after six to twenty-four hours of vasoconstriction.

(*h*) Necrosis and rupture of the hematomas. Bleeding may last for some twenty-five to seventy minutes.

(*i*) Bleeding as a series of localized hemorrhages with blood escaping in any of several different ways. It may occur as diapedesis; as direct escape from capillaries or arterioles, or as venous hemorrhages. Of these, 22 per cent of hemorrhages observed by Markee in the monkey were venous hemorrhages. They lasted on the average for forty-seven minutes, in contrast to the other types of bleeding which lasted only a few minutes.

(*j*) Decided slowing in the rate of blood flow in the capillaries.

(*k*) Desquamation of mucosal tissues as a sequel to the intense vascular crisis.

The menstrual process, according to Markee, depends on four essential conditions in the foregoing train of events. These are thinning of the endometrium, increased coiling of the spiral, or coiled, arterioles, hemostasis and intense vasoconstriction. These phenomena have been studied objectively, and no one can doubt their correctness for the rhesus monkey; also, these phenomena on which menstruation depends apply, no doubt, for all other species having endometrial coiled arterioles. There are, nevertheless, two fundamental points which require examination before one can accept this point of view without qualification.

12. Smith, G. S., and Smith, O. W.: Menstrual Toxin, in Engle, E. T.: Proceedings of the Conference on Menstrual Disorders, Princeton, Princeton University Press, 1947, to be published.

In the first place, Markee's work does not allow for the existence and possible role of arteriovenous anastomoses in the human endometrium. However, Bartelmez maintains that they do not exist in Macacus rhesus (Bartelmez, 1947[13]). These structures are present, as has been shown, in the superficial layers of the functionalis in the human being in increasing numbers as the menstrual cycle advances. One must also suppose, in agreement with Schlegel (1945-1946),[2] that these structures, if present, are indeed functional and not histologic ornaments. The effect of their activity would be, as with arteriovenous anastomoses elsewhere in the body, to shunt blood away from a peripheral capillary bed. This could conceivably contribute to the initial capillary stasis of menstruation in the superficial part of the endometrium. The presence of extensive venous lakes in the subepithelial portion of the uterine mucosa bears testimony to the fact that venous pressure is relatively high, and the circulation of blood in the capillaries of this area must be decreased accordingly.

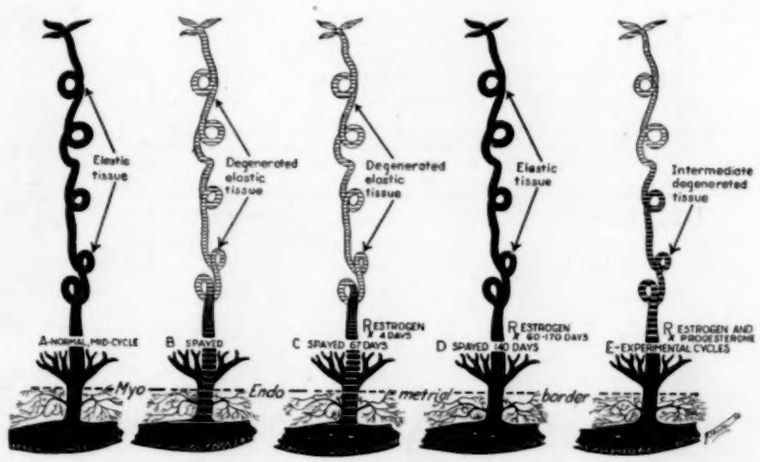

Fig. 5.—Schematic representation of the different susceptibility of the uterine arteries and arterioles to prolonged estrogen deprivation. The cross hatched areas signify fibroelastoid (hyaline degeneration of elastic connective tissue. Note that only the coiled and radiate arteries are affected and that prolonged treatment with estrogen is necessary for restoration of the elastic tissue. Based on the work of Okkels and Engle (1938).[11]

In the second place, the concept of menstruation advanced so effectively by Markee on the basis of his observations in the rhesus monkey neglects the fact that at least three species of New World monkeys possess no spiral, or coiled, arterioles in their endometria (Kaiser, 1947[4]). Nevertheless, these monkeys manifest microscopic bleeding at periodic intervals (Hamlett, 1939;[14] Goodman and Wislocki, 1935[15]), and they exhibit periodic desquamation of the endometrium (Goodman and Wislocki, 1935;[15] compare Kaiser, 1947[4]). These conditions are in accordance with the basic and acceptable definition of menstruation set forth by Bartelmez (1937[16]), in his article on the mechanism of menstruation, in which he stated: "Menstruation is a bloody discharge associated with necrosis of the uterine mucosa, recurring, in the absence of pregnancy, at intervals of from three and one-half

13. Bartelmez, G. W.: The Mechanism of Menstruation, Anat. Rec. **97**: 64, 1947.
14. Hamlett, G. W. D.: Reproduction in American Monkeys: I. Estrous Cycle, Ovulation and Menstruation in Cebus, Anat. Rec. **73**: 171, 1939.
15. Goodman, L., and Wislocki, G. B.: Cyclical Uterine Bleeding in a New World Monkey (Ateles Geoffroyi), Anat. Rec. **61**: 379, 1935.
16. Bartelmez, G. W.: Menstruation, Physiol. Rev. **17**: 28, 1937.

to five weeks in certain primates." Figure 7 illustrates menstruating endometrium from one of the cebus monkeys described by Kaiser (1947).[4] These tissues are devoid of spiral arterioles, as were those of preparations made from 73 New World monkeys studied by Kaiser (1947).[4] The quantity of tissue desquamated and the amount of blood discharged is undeniably less in New World monkeys than it is in the rhesus monkey and in the human being. This is not, however, a denial of the fact that menstruation does occur in these forms. Rather, it is merely a statement to the effect that the amount of tissue to be shed in order to effect a transition from a secretory to a proliferative endometrium is substantially less in primates without endometrial coiled arterioles than it is in those possessing complex vascular structures in their endometria.[17]

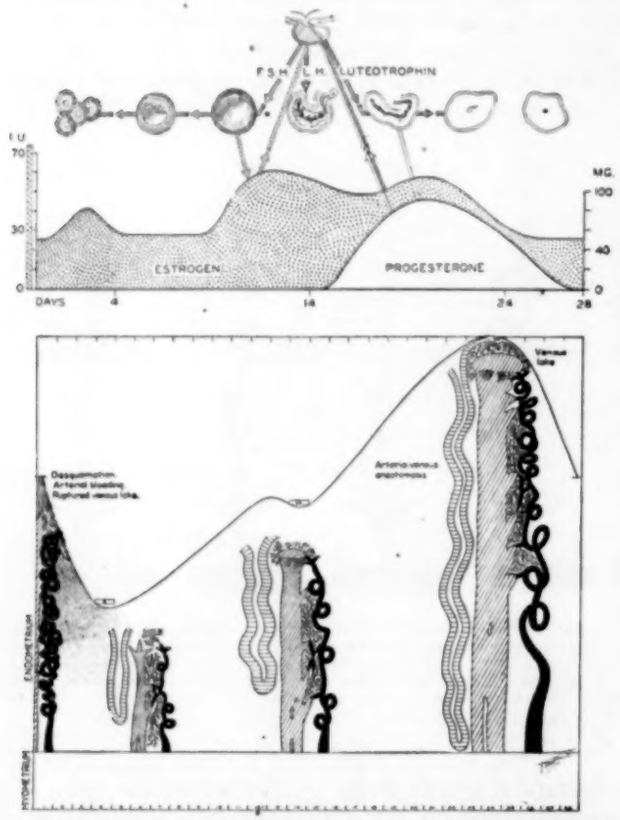

Fig. 6.—Schematic representation of the relation of cyclic vascular changes in the uterus to the chief hormonal factors with which these are associated. Based on a diagram by Markee (1946).[16]

THE MENSTRUAL MECHANISM

The foregoing array of facts affords one a working hypothesis on which to build a concept of the menstrual mechanism. Briefly stated, this is as follows:

1. In the absence of a fertilized ovum, the growth-promoting action of the ovarian hormones on the uterine mucosa is withdrawn.

2. Regression, or thinning of the endometrium, sets in as a consequence of the foregoing hormonal changes. In those forms having no endometrial coiled arterioles, edema and slight desquamation takes place. In those having highly specialized vascular structures in their endometria, reliable investigation has demonstrated the fact that increased coiling of the spiral arterioles occurs as a consequence of withdrawal of the growth stimulus to the endometrium and thinning of this tissue. Altered hemodynamic factors, concerning which no objective facts are available, contribute to capillary stasis, tissue edema and leukocytic infiltration of the tissues. As would result elsewhere in the body when there is ischemia, there occurs in the endometrium local accumulation of the usual products of the degeneration of tissue and protein. Such substances, as Markee observed, proceed to give rise to intense constriction of the endometrial spiral, or coiled, arterioles.

17. For discussion of the special case of the gibbon, refer to Kaiser.[4]

Fig. 7.—Histologic section of endometrium of a New World monkey (cebus) on the first day of menstruation. No spiral or coiled arterioles were present in such endometria; photomicrograph slightly reduced from a magnification of × 60; see Kaiser[4] for details.

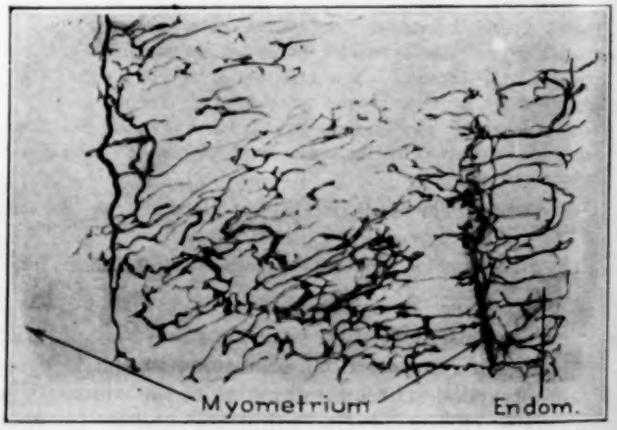

Fig. 8.—Lymphatic network drawn from a reconstruction of serial sections of the uterus of the rhesus monkey. Lymphatics were found in other preparations in the outer zone of the myometrium but never in the superficial fourth (subepithelial portion) of the endometrium. From Wislocki and Dempsey (1939).[18]

In the foregoing concept there exists a situation in which local necrosis must occur. The local circulation is not sustained, there is transudation of fluids, and substances are produced which favor further destruction of the local tissues. Thus in either type of menstruation—that which is not associated with endometrial coiled arterioles or that which is associated with them—there is a deficient mechanism whereby transuded plasma proteins, which are the sine qua non of edema, fail to be removed. This fact suggests, accordingly, that the key to an understanding of menstrual mechanisms lies in a knowledge of the characteristics of the lymphatic drainage of the endometrium. Little is known concerning this topic. The only description available with regard to the distribution of lymphatic vessels within the primate endometrium is that of Wislocki and Dempsey (1939),[18] who have shown that endometrial lymph vessels in a nearly mature rhesus monkey were confined to the bottom three fourths of the endometrium. The superficial fourth of the endometrium was devoid of lymphatic capillaries. This is shown in figure 8. There is, therefore, a morphologic basis for expecting that subepithelial edema with attendant necrosis and desquamation may be associated with a deficient mechanism for removal of plasma proteins from interstitial spaces. Thus this may be the key functional point around which menstruation revolves. Clearly, more work should be done to test the validity of such an assumption.

A MENSTRUAL TOXIN?

In conclusion, reference must be made to the important work of Smith and Smith (1947)[12] on the subject of a so-called menstrual toxin. These investigators have established that a substance is contained in menstrual discharge which is highly toxic when injected into rats. It kills them within twenty-four hours.

This active substance in menstrual discharge is a euglobulin. It is found in greatest concentration in the cellular debris fraction of menstrual centrifugate. It is present in highest concentration in early menstruation but diminishes in amount as the quantity of menstrual discharge increases. The toxin has been found in fresh endometrium prior to the onset of actual bleeding, although it is not present at other times in the menstrual cycle. It is present whether the cycle has been ovulatory or anovulatory.

There is no question concerning the validity of the foregoing facts. They have been established by objective tests. There are two reservations, however, which must be made in connection with them. First, the precepts of sound logic require that one refrain from stating that this toxin is the cause of the onset of menstruation. It has been seen that menstruation is the result of a series of integrated effects resulting from the special structural and functional features found within the endometrium. Second, if the euglobulin which Smith and Smith have demonstrated to be present in menstrual discharge is in fact related to the intense vasoconstriction which Markee has shown to be part of the whole process, then it might well be called something other than a toxin, since it subserves a physiologic role during the sex cycle.

18. Wislocki, G. B., and Dempsey, E. W.: Remarks on the Lymphatics of the Reproductive Tract of the Female Rhesus Monkey (Macaca Mulatta), Anat. Rec. **75**: 341, 1939.

MENOMETRORRHAGIA DURING ADOLESCENCE

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Any consideration of menometrorrhagia during adolescence and conditions associated with this age group requires that attention be directed to distinguishing between the terms adolescence, menarche, puberty and maturity, because they have been employed loosely and invariably as being synonymous. Adolescence has been defined as "the process or condition of growing up . . . the period between childhood and maturity." It therefore includes the latter part of the growth period and the transition to complete somatic and sexual maturity. During this time there are important changes in the organs of internal secretion, a gradual cessation of increase in stature, a psychic transformation and the acquisition of the secondary sexual characters. The appearance of the first menstruation, the menarche, normally is one of the most important events of this epoch and is readily recognized, but it is not the end point of these various processes. On the other hand, maturity implies that the young woman has attained the completion of somatic growth and has acquired the capability of bearing children. It usually is reached some years after the menarche. The word puberty is still more confusing, as it has received many definitions, some, unfortunately, with the assistance of sentimental popular novelists. It would be desirable to drop the word puberty from medical literature unless it is limited and generally accepted as referring to some definite period. One suggestion is to limit the term to the months or years which extend from the menarche to maturity.

ABNORMAL UTERINE BLEEDING

It is most unfortunate that such terms as puberty bleeding and menopausal bleeding are in constant usage, since they are actually nonentities. There is no such thing as puberty bleeding or adolescent bleeding, since there is no single specific factor concerned; the terms merely serve as a clue to the age of the patient or patients concerned. It is important to remember that any of the various causes which lead to abnormal uterine hemorrhage may be effective at any time from the menarche to the menopause. Instances have been reported of bleeding during adolescence from fibromyomata uteri, adenomyoma, inflammatory lesions of the pelvic organs, incomplete abortion, systemic diseases, such as purpura hemorrhagica, and endocrine dyscrasias. Pollock and Taylor [1] found in the literature 30 cases of cancer of the cervix uteri occurring during the first two decades and added 1 of their own. Traina-Rao and Pesce [2] in a series of patients with cancer of the cervix observed that the youngest was 14 years of age and that 0.14 per cent were from 10 to 20 years of age.

Although there is no single specific causative factor for menorrhagia or metrorrhagia during adolescence there is a definite relationship between the etiologic

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1. Pollock, R. S., and Taylor, H. C., Jr.: Cancer of the Cervix During First Two Decades of Life, Am. J. Obst. & Gynec. **53**: 135 (Jan.) 1947.
2. Traina-Rao and Pesce, V. S.: Cancer of the Cervix with Special Reference to Young Women, Clin. ostet. **47**: 149, 1945.

factors and the frequency of their occurrence. It is of importance to be aware of the different lesions just mentioned, but at this age period they are unusual events; in the vast majority of instances the bleeding stems from the nature of the early menstrual cycles and the existence of an endocrine disorder which leads to hyperplasia endometrii.

EARLY MENSTRUAL CYCLES

The appearance of the first episode of cyclic uterine bleeding does not necessarily mean that menstruation with a complete ovarian cycle has become established. As Hartman [3] has stated, "there is a gradual process as the adolescent female gets her stride, as it were, in the matter of her menstrual regularity and the sexual cycle in general." This feature is demonstrated clinically by the fact that the early cycles are particularly

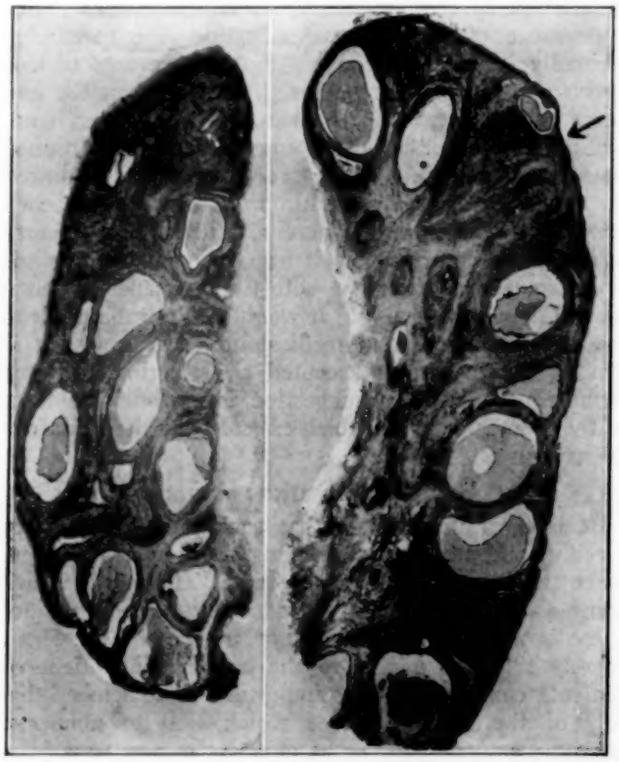

Fig. 1.—Degenerating corpus luteum (arrow) in ovary of a girl aged 12 who died of a cerebral hemorrhage. The opposite ovary shows only atretic follicles. She had had four menstrual periods and this is offered as evidence that ovulation occurred only once during this time. After Laqueur.[10]

prone to be irregular, with frequent periods of amenorrhea and at times profuse and prolonged menstruation. For the first few years, in spite of the occasional occurrence of gestation in young girls, there is also a relative sterility (Hartman [3]). With child marriages of India cohabitation begins at the menarche, but it is stated that usually the first child is not born until the third year of effective marriage. It is remarkable also that among peoples such as the Trobriand islanders and the Igorots and Bontoks of the Philippine Islands, pregnancy in young unmarried girls is extremely rare despite the absolutely unrestrained and promiscuous sex life which begins in childhood.

These observations are associated with the occurrence of a preponderance of anovulatory cycles at this age period. At such times cyclic uterine bleeding is present but ovulation does not take place; the ovaries do not contain an active corpus luteum, and the endometrium is in the stage of proliferation observed after estrogenic stimulation. The incidence of such cycles was first demonstrated in the Macacus rhesus monkey by Corner,[4] Hartman [3] and Edgar Allen,[5] but evidence has accumulated to show that these cycles are also found in the human subject (Corner,[6] Bartelmez,[7] Mazer and Ziserman [8] and Novak.[9] An excellent example is the case recently reported by Laqueur [10] of a girl aged 12 who died after a spontaneous intracerebral hemorrhage. She had had four menstrual periods immediately prior to her death, and examination of the ovaries showed the presence of only one degenerating corpus luteum, thus indicating that ovulation had occurred only once (fig. 1).

HYPERPLASIA ENDOMETRII

The most frequent cause of unduly prolonged or profuse cyclic and acyclic uterine bleeding which may occur during both early and late menstrual life is an endocrine disturbance of a somewhat obscure origin. In this country it is generally referred to by the name applied to the histologic appearance of the endometrium, namely, hyperplasia endometrii, and all attempts to give it some connotation referring to a systemic endocrine disturbance, such as metropathia hemorrhagica, have failed to gain general acceptance. Nevertheless, this disorder must be recognized as the most important but not the sole factor producing pathologic uterine bleeding in the postmenarcheal and premenopausal periods of life.

Although one is tempted to draw comparisons between anovulatory menstruation and hyperplasia endometrii there are such distinct differences between the two, both clinically and in the histopathologic observations in the endometrium, that the latter must be considered as a separate pathologic entity. It is unfortunate that it does not occur spontaneously in monkeys, as the anatomists possibly could give much assistance, but the best they have offered so far is to reproduce a similar lesion by the use of massive doses of estrogenic hormones in castrates.

During the postmenarcheal period hyperplasia endometrii manifests itself by abnormal uterine bleeding. Usually it appears as cyclic bleeding occurring at longer or shorter intervals, and not only is it extremely profuse but it may persist for many days longer than average menstrual periods. At times the bleeding follows amenorrhea of many weeks' or months' duration. In still other instances the flow is slight but continuous over long periods of time. It is important to note that the bleeding in these cases is not accompanied by pain, while the occurrence of dysmenorrhea is generally associated with ovulatory cycles.

The clinical examination of patients with hyperplasia endometrii does not usually bring to light any signifi-

3. Hartman, C. G.: Studies in the Reproduction of the Monkey Macacus Rhesus, Contrib. Embryol. **134**: 1-161 (Aug.) 1932.

4. Corner, G. W.: Ovulation and Menstruation in M. Rhesus, Contrib. Embryol. **75**: 75-101, 1923.

5. Allen, E.: The Menstrual Cycle of the Monkey, Contrib. Embryol. **98**: 1-44, 1927.

6. Corner, G. W.: Relationship Between Menstruation and Ovulation in the Monkey, J. A. M. A. **89**: 1838 (Nov. 26) 1927.

7. Bartelmez, G. W.: Histological Studies on the Menstruating Mucous Membrane of the Human Uterus, Contrib. Embryol. **142**: 141-186 (Sept.) 1933.

8. Mazer, C., and Ziserman, A. J.: Pseudo-Menstruation in Human Female, Am. J. Surg. **8**: 332 (Nov.) 1932.

9. Novak, E.: Clinical Syndromes Referable to failure of Ovulation, Am. J. Obst. & Gynec. **37**: 605 (April) 1939.

10. Laqueur, G. L.: Anatomical Demonstration of the Anovulatory Menstrual Cycle, California & West. Med. **63**: 268 (Dec.) 1945.

cant observations. The development of the secondary sexual characters is invariably complete; there is no characteristic pattern as to stature or weight, nor are there endocrine stigmas. Rectal or vaginal examination may reveal a slightly enlarged and soft uterus, but this observation at this age is not constant.[11] Often there is a lowering of the basal metabolic rate, but other laboratory investigations offer no assistance except for the low blood count which naturally accompanies the anemia produced by the frequent hemorrhages.

The pathologic changes in the endometrium and the ovaries have been the subject of many studies since those of Robert in 1846, Olshausen in 1875, Bischoff in 1878, Brennecke in 1882 and Cullen in 1900. In more recent times concepts have been based on the work of Schroeder[12] in 1915 and Meyer[13] in 1920, followed by that of a host of investigators, to mention only a few, Novak, Seitz, Shaw, Fluhmann, Tietze, Burch, Jeffcoate and Payne.

The ovaries are sometimes slightly enlarged and may be palpable. On histologic examination their appearance is strongly reminiscent of that observed in women who have had a number of anovulatory cycles such as in the case reported by Laqueur.[10] The most characteristic feature is the absence of active corpora lutea, and in instances of long standing there is no evidence of recent ovulation. The ovaries contain graafian follicles in various stages of development, some with well preserved granulosal and thecal layers but mostly showing all stages of atresia. Since each gonad may display as many as ten to thirty cysts of this type the general picture conforms with the classic description of "cystic degeneration of the ovaries."

It is in the endometrium, however, that one must look for the striking manifestations of this disease. The endometrium grossly is likely to be thickened and edematous, and large amounts of tissue may be obtained on curettage. The final diagnosis is made on histologic examination, and I consider that a differentiation must be made on whether the specimen is obtained at a time when the patient is in a quiescent stage or actually bleeding. The stroma is dense and cellular, the cells are spindle shaped, and active proliferation is evidenced by numerous mitotic figures. The presence of many large blood vessels is a prominent feature, and in some instances there are decidedly dilated veins under the surface epithelium. There are several types of glands which are arranged in a totally disorderly fashion. First, there are glands with a single layer of cylindric epithelium, identical with those normally found during the stage of proliferation. Second, glands with stratified epithelium reflect the pronounced growth activity so characteristic of this disease and at times make one suspect the existence of cancer. Third, cystic glands lined with a low cuboidal epithelium are an important characteristic, and the gross appearance which they impart to the uterine mucosa led Novak to refer to a "Swiss-cheeze" pattern of this lesion. Whenever the specimen of endometrium is obtained while the patient is actually bleeding additional features are observed, namely, areas of necrosis with thrombosis of neighboring blood vessels and an extensive infiltration with leukocytes.

The actual cause of hyperplasia is not known, although it has been suggested that it may result from a disordered anterior hypophysial activity characterized by the production of excessive amounts of the follicle-stimulating hormone and diminished or absent formation of the luteinizing factor. At any rate, there is ample evidence that the endometrial picture is due to estrogenic stimulation in the absence of the corpus luteum factor. It was once thought that it was the direct result of an overproduction of estrogen, and the term hyperestrinism was coined (Fluhmann[14]). However, studies of the estrogenic content of blood have failed to substantiate this theory. In fact, the blood of many patients during the nonbleeding phase manifests a low estrogen content, and there even may be a cycle in its production (Fluhmann[15]). It is of special interest that some women have shown a gradual increase in the amount of estrogen demonstrable just before the onset of a hemorrhagic episode (fig. 2), and with the subsidence of the bleeding there has been a corresponding drop in the hormone level (Fluhmann[16]).

When hyperplasia endometrii occurs in young women it is essentially a self limited disease, and ovulation with a restoration of normal menses is to be anticipated. Of 15 juvenile patients observed over many years Klingelhöfer[17] found that only 3 gave any evidence of ovarian disturbance in later life. However, it is of importance to remember that hyperplasia may persist for many months or years, during which time the patient should be under constant surveillance.

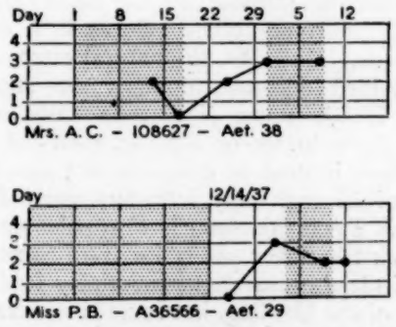

Fig. 2.—Rise in the blood estrogen level with the onset of a hemorrhagic episode in hyperplasia of the endometrium. (Fluhmann[15]).

The treatment should have two aims. First, any anemia resulting from the hemorrhage must be combated with suitable medicaments containing iron, and it may even be necessary to resort to blood transfusions. Second, attempts should be made to control the bleeding, and in adolescent girls the methods at present in vogue are in the main endocrine measures. However, when the diagnosis is obscure, or in occasional intractable cases, a curettage is indicated and may be repeated. A hysterectomy is only resorted to in extremis, and the only instances I know in which it has been performed have been in patients neglected

11. In extremely infrequent instances the lesion is a direct result of a granulosa cell tumor of the ovary, which may be palpable.
12. Schroeder, R.: Pathologic Studies of the Menstrual Cycle, Arch. f. Gynäk. **104**: 27, 1915.
13. Meyer, R.: Normal and Pathological Ovulation, Arch. f. Gynäk. **113**: 259, 1920.
14. Fluhmann, C. F.: Hyperplasia of the Endometrium and the Hormones of the Anterior Hypophysis and the Ovaries, Surg., Gynec. & Obst. **52**: 1051 (June) 1931.
15. Fluhmann, C. F.: Menstrual Disorders, Philadelphia, W. B. Saunders Company, 1939.
16. (*a*) Fluhmann, C. F.: Estrogenic Substances in the Blood of Women, Am. J. Obst. Gynec. **32**: 612 (Oct.) 1936. (*b*) Fluhmann.[15]
17. Klingelhöfer, W.: Later Consequences of Juvenile Bleeding, Zentralbl. f. Gynäk. **65**: 743 (April) 1941.

for long periods of time. Although still advocated by some physicians I am opposed to irradiation either with roentgen rays or radium, even at small dosages, because of possible injury to the ovaries and potential harm to the germ plasm, which may manifest itself in the offspring of the second or later generations.

Of the endocrine preparations of value thyroid extract still remains the most valuable in patients with low basal metabolic rates, and it should be administered to the point of tolerance. Its usage in the absence of any evidence of hypothyroidism is definitely open to question. The anterior pituitary preparations available today are of no value and in some instances appear to intensify the episodes of bleeding. Chorionic gonadotropin long has been recommended, but its employment has been abandoned by most authorities. If it is used it must be given at a time when bleeding is present and at large dosages, such as 1,000 or 2,000 international units a day.

It is remarkable that large doses of either estrogen or progesterone are extremely effective in the control of the bleeding. Their employment over several months for a few days at the start of each bleeding period may also prove of curative value, but the importance of large dosages at such times cannot be overemphasized. Karnaky [18] first advocated the employment of diethylstilbestrol for this purpose, but the nausea and vomiting which this substance often induces is a considerable disadvantage. However, the natural estrogens may be used provided adequate dosages are supplied (for example, 20,000 units of estrone daily or 2.5 mg. estradiol dipropionate or 3.0 mg. estradiol benzoate). Progesterone is used in a similar way and is given at dosages of 10 mg. daily intramuscularly for four or five days. Pregneninolone is also valuable, but 40 to 50 mg. must be taken orally for from five to ten days. Either of these preparations invariably lead to a rapid cessation of the bleeding, but some six or ten days later a moderate flow for a few days often occurs, and the patient must be warned of this possibility. If it does not become protracted no treatment is indicated. The explanation for this secondary bleeding is that a stage of secretion has been superimposed on the hyperplastic endometrium and an artificial menstruation has been produced. Since this results in a desquamation of the endometrium Jones and Te Linde [19] refer to this treatment as inducing a "medical curettage." Although the androgens have a place in functional bleeding in older women they are contraindicated in this age group because of the adverse effects which may result from prolonged treatment.

SUMMARY

Abnormal uterine bleeding is of frequent occurrence during the years immediately following the menarche and may result from any of the lesions found during active sexual life. The most frequent cause, however, is the incomplete ovarian function characteristic of this age period and the endocrine disorder known as hyperplasia of the endometrium. The clinical history, diagnosis and treatment of hyperplasia endometrii are given.

490 Post Street.

18. Karnaky, K. J.: Endocrines in Gynecology and Obstetrics, Texas State J. Med. **36**: 379 (Sept.) 1940.
19. Jones, G. E. S., and Te Linde, R. W.: An Evaluation of Progesterone Therapy in the Treatment of Endometrial Hyperplasia, Bull. Johns Hopkins Hosp. **71**: 282 (Nov.) 1942.

FUNCTIONAL BLEEDING

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Definition.—Functional bleeding is loss of blood from the uterus without demonstrable pathologic cause. The term must include normal menstruation. No amount of logic or argument can confute that statement, despite the fact that physicians all prefer to limit the meaning of the term functional bleeding to abnormal loss of blood. A satisfactory explanation of the physiologic basis of normal menstruation, although not yet complete in some essentials, must serve as a basis for adequate understanding of menstrual abnormalities.

In common parlance, functional bleeding includes all cases of excessive uterine flow ascribable to endocrinopathic disturbances except those in which there are tumors of the endocrine glands. It does not include bleeding caused by high blood pressure, blood dyscrasias and other recognizable systemic affections.

Special Factors in Abnormal Functional Bleeding.—In consideration of the causes of abnormal functional bleeding, I shall not elaborate on the accepted belief that pituitary or hypothalamic dysfunction may cause bleeding through excessive stimulation or inadequate control of ovarian activity, particularly in the elaboration of estrogen; nor need I emphasize that bleeding may occur because of failure of the ovary to respond to pituitary gonadotropic stimulation. That fluctuation in the estrogen level, rather than hyperestrinism or prolonged uninterrupted action of estrogen, is responsible for bleeding is common knowledge.

Absence of ovulation with consequent deprivation of progesterone is common during adolescence and during the period of waning ovarian activity at the menopause. At these times without ovulation the uninterrupted action of estrogen tends to be rather self limited: there is almost never endangering menopausal bleeding from this factor alone, but during adolescence the functional flow may be serious.

Although abnormalities of the hormonal rhythm during adolescence and at the menopause are well known, it is apparently not recognized that menorrhagia tends also to occur at the time when ovarian activity begins to falter, usually at an age of from 36 to 38 years. To this last-named period I apply the term "little menopause." Menorrhagia at this time affects particularly those who have led lives of frustration, sexually or otherwise; those with lesser endocrine disturbances; those with endocervicitis, and those with a familial history of menorrhagia.

Intractable bleeding of the menopause, sufficient to demand intervention, is seldom purely functional. Persistent profuse flow bespeaks a pathologic condition, often small myomas which elude identification and are recognized only on palpation with the patient under anesthesia or on dilatation and curettage or on opening the uterus after hysterectomy.

The aim of this article is to assess all practical information pertinent to functional bleeding. Therefore, at this juncture I am impelled to pause for a moment to consider one affection—high blood pressure—in

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relation to postmenopausal uterine bleeding. I was surprised at a statement made recently in Chicago,[1] that high blood pressure is not a cause of uterine bleeding, for I have seen many instances of otherwise inexplicable hemorrhage after the menopause in which a pressure of 185 mm. of mercury or more has been the only demonstrable lesion.

Diagnosis.—For clinical purposes, let me evaluate those measures which are of assistance in making an accurate diagnosis of the cause of bleeding and devaluate those which are chiefly of academic interest:

A pelvic examination should include rectovaginal palpation, for the latter gives much more accurate information than does vaginal examination alone.

I am impressed that special endocrine studies are not necessary in the diagnosis of functional bleeding and that diagnostic curettage is required chiefly for recognition of tumors, particularly cancer.

Estrogenic therapy has completely disoriented the medical appraisal of menopausal bleeding: Smears from those who have received enough estrogen to produce bleeding often reveal evidence of cellular activity suggestive of cancer; the uterine curettings may yield patterns simulating adenocarcinoma enough to confuse even an experienced pathologist; the increase in induration, bulk and weight of the uterus is often deceptive. In view of all these factors in bleeding patients who have been receiving estrogenic therapy, discontinuance of the medicament and expectant care for three weeks or more is preferable to immediate diagnostic intervention with unqualified interpretation of the evidence.

Since the advent of "dicumarol" it has been observed that salicylates also have a tendency to produce hemorrhage. Routine inquiry about the amount of acetylsalicylic acid taken by patients who consult the physician for vesical or uterine bleeding permits an occasional diagnosis of otherwise inexplicable functional bleeding.

Elimination of the Hazard of Cancer.—Vaginal smears to rule out otherwise undetectable cancer are an asset, but I must emphasize that the dependability of skilled examination of cervical and vaginal smears in search for evidence of uterine cancer has been overstressed. For example, metaplasia of the cervical epithelium is of common incidence, and isolated cells or groups of cells sloughed from the metaplastic cervix may defy differentiation from malignant cells. This is particularly true if the patient has received estrogenic therapy.

Cervical biopsy for elimination of cancer is a diagnostic asset. Failure to remove a specimen for biopsy preliminary to office cauterization of a dubious cervical lesion is unwise.

TREATMENT

Therapeutic Curettage.—The percentage of cures incident to therapeutic curettage varies directly with the frequency with which one resorts to this procedure. The majority of patients with functional bleeding recover spontaneously; if one curets only those with intractable bleeding, the prospect of relief is scarcely worth the expense of hospitalization unless the procedure is indicated also to determine whether there is a submucous tumor or a malignant growth. To my mind therapeutic curettage in the earlier stages of functional bleeding is in a measure comparable with curettage after spontaneous abortion, which is often a race to determine whether the physician can get the patient to the hospital before bleeding ceases.

Hemostatic Therapy.—My experience with ergot preparations is that they are of limited value in hemostasis. Vitamins B, C (ascorbic acid) and K are in an experimental stage. Commonly accepted measures for the control of anemia require no discussion here.

Radiation Therapy.—Treatment by radiation has lost much of its appeal except in the care of cancer, but surely it merits a permanent place in the therapy of menopausal bleeding, irrespective of whether myomas of small size are present. Preliminary curettage is essential.

Hormonal Therapy.—The value of thyroid medication in selected cases of functional bleeding is widely accepted and requires no further comment.

At no time in the history of gynecology has there been so much confusion regarding other hormonal therapy. If sex hormones are to be employed, some divergence of opinion centers about whether estrogens or androgens are preferable. In evaluation of the rather widespread belief that male hormones are unnatural and harmful to women, certain facts merit mention: Androgens are produced, are metabolized and are excreted by the normal woman. Almost as much androgen is found in the urine of the normal human female as in that of the male. The hazard of masculinization from judicious androgenic therapy has been overstressed.

Prior to further elucidation of the physiology of the sex hormones and more satisfactory demonstration of the efficacy of specific products, I have found it preferable to avoid substances, notably estrogens, which tend to increase the size and activity of the uterus and endometrium. It is known that testosterone inhibits pituitary gonadotropic activity and that it has a direct inhibiting effect on the uterine musculature. And, in any event, it controls bleeding and accomplishes it without producing palpable enlargement of the uterus and hypertrophy of the endometrium.

The routine procedure is the administration of three 10 mg. tablets of methyltestosterone a day when there is free bleeding and two a day when there is moderate bleeding, but none when there is slight flow. It is preferable to allow the tablets to melt in the mouth, for absorption into the circulatory system increases the efficacy of testosterone. In those unusual instances in which methyltestosterone fails to afford satisfactory control of the bleeding, one may give additional intramuscular injections of 25 mg. of testosterone every second day until the flow ceases.

Androgenic therapy is not a specific cure. However, it inhibits bleeding, month after month, usually until the menorrhagia-provoking mechanism has reverted to normal or, sometimes, until a pathologic cause of the bleeding becomes evident.

SUMMARY

1. The nature and causes of abnormal functional bleeding remain undetermined, although less problematic than heretofore.

2. Treatment of abnormal functional bleeding is largely symptomatic and empiric. Hormonal therapy is confused and in a state of flux but fairly satisfactory.

104 South Michigan Avenue.

1. Allen, W.: Paper read at the meeting of the Chicago Medical Society, Jan. 18, 1947.

BLEEDING ASSOCIATED WITH THE MENOPAUSE

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Rhythmic bleeding over a period of years is a habit that is accepted. Any variation of duration in rhythm or amount of bleeding causes anxiety to the patient and obligates the physician to find a satisfactory explanation. Cancer education has taught many more women to be aware of irregular bleeding and has induced them to seek professional advice, thereby increasing the opportunity for early diagnosis of cancer. While cancer is the most important cause of menopausal bleeding, many other conditions are to be considered.

The average age at the menopause is about 47, but it may appear years earlier or later. Since cyclic activity of the uterus depends on ovarian function, the menopause is really an expression of the state of the ovaries. The peak of ovarian activity is reached at about the age of 25. From that time there is a gradual decrease of ovarian function until a level is reached that is too low to induce menstrual flow. Hence, the premenopause might be said to begin at 25 years of age.

Normal cessation of menstruation at the menopause varies in different persons, and sudden cessation of flow is not the most commonly observed form. For a few months or years preceding the menopause there may be an increase in the amount or frequency of flow. In such instances the interval must be regular and not less than two weeks to be considered normal. To place a limit on the amount of flow that is normal is more difficult, but much will depend on the patient's previous record; e. g. heavy flow appearing in a woman who previously had scant flow should arouse suspicion. A gradual decrease in the amount or frequency of flow is usually not a cause for concern.

Uterine bleeding may be a symptom of anatomic lesions, or it may occur without any structural change being demonstrable. Physiologic disorders may appear without any evident structural basis, or bleeding may be associated with but not dependent on anatomic lesions. Interpretation of the cause of bleeding, therefore, requires a careful search for a lesion which might explain the symptom. If no lesion is found, disturbance of function is assumed; then a thorough survey of the patient for systemic disease and glandular disorders is indicated.

When a problem of uterine bleeding is presented, many conditions may enter into the differential diagnosis. Some of these may now be briefly mentioned:

1. Hyperplasia of the endometrium may occur at any time during the reproductive period, at the menopause or even long after the menstrual flow has ceased. At any period of life the mechanism is the same—an abnormally persistent and relatively excessive estrogenic influence, producing growth of the endometrium. Bleeding of the hyperplastic endometrium may be explained by the same process of vascular changes as that which occurs in menstruation, but the growth of endometrium and the amount of bleeding are not proportional to the excess of estrogen. Diagnosis is made by history and curettage. Ribbons of tissue as well as the amount of tissue removed by a curet are suggestive. Microscopic examination is usually conclusive, but in some instances it is exceedingly difficult to distinguish between benign adenoma, adenocarcinoma and hyperplasia. In some instances the diagnostic curettage alone is adequate treatment. If the bleeding persists, the relative merits of irradiation (to reduce ovarian function) or hysterectomy are to be considered. Hormonal therapy may be tried, but since any type of endometrium may bleed and since the amount of bleeding is not proportional to the excess of estrogen, choice of the hormone to be used remains problematic.

2. Cervical polyps are frequent in women after the age of 40. These growths may be present for a long time without symptoms. Bleeding, the chief symptom, may be an increase of the menstrual flow or slight spotting between the periods. Postcoital staining may be noted, and occasionally a severe hemorrhage occurs. Although polyps are usually benign, diagnosis of them is important, for the symptoms may simulate those of cancer. Most polyps can be seen and felt, for their presence causes dilatation of the external os. Unusual patency of the os should arouse suspicion that a cervical polyp exists. Growth of a hidden polyp may frequently be stimulated by estrogenic therapy, thus facilitating its detection. The majority of cervical polyps are pedunculated and can be diagnosed macroscopically. Sessile polyps require microscopic analysis. Treatment of cervical polyps is excision, and when they are pedunculated it is a temptation to remove them at the time of the examination in the office. However, it is better to curet the uterus and cervical canal, for other lesions may be present.

3. Endometrial polyps present similar problems of bleeding. Diagnosis may be suggested by the symptoms, but final proof rests on their removal.

4. Adenomyosis of the uterus in women past the age of 40 is a cause of hemorrhage which is often extensive. Treatment is either reduction of ovarian function or hysterectomy. If artificial menopause has been established, the use of estrogens for menopausal symptoms is contraindicated because the bleeding might recur.

5. Fibromyomas of the uterus, particularly in the submucous location, tend to produce a more profuse and prolonged flow and to shorten the intermenstrual interval. When the tumors protrude into the uterine cavity and become polypoid, necrosis with infection may occur with symptoms of intermenstrual bleeding and foul discharge, thus simulating cancer.

6. Functioning tumors of the ovary occur from childhood to old age, but the majority are found after middle life. In the postmenopausal patient the estrogen-producing function of the feminizing tumors stimulates the uterus, producing renewed growth of the myometrium and endometrium. Atypical bleeding occurs, which may be cyclic or regular, scanty or profuse. The presence of an ovarian tumor with renewed bleeding is significant.

7. Vascular changes are accepted as normal for the menopause. As the ovarian function diminishes, the blood vessels of the uterus shrink and show varying degrees of arteriosclerosis. Occasionally a sclerotic vessel ruptures, giving rise to more or less serious hemorrhage. I recall 1 such instance in which the

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patient bled profusely, requiring transfusion before she could be moved from her home to the hospital for hysterectomy. Examination of the uterus revealed a single rupture in a sclerotic artery. Her vascular system did not manifest generalized arteriosclerosis.

8. Inflammations of the ovary or uterus are associated with menorrhagias during the earlier years of the reproductive period. The same conditions may persist up to the menopause but cannot be considered characteristic of this period in life. There are certain inflammatory lesions, however, associated with involution; e. g., senile vaginitis. As the estrogenic stimulation diminishes, the vaginal mucosa is reduced in thickness and the blood vessels come to lie close to the surface, giving a characteristic reddish appearance. The smooth surface is easily abraded and often becomes infected. Opposing surfaces may heal together even to the point of obliteration of the upper part of the vagina. The discharge from infected areas and from breaking adhesions is often blood-tinged. Occasionally the bleeding may be profuse.

9. During the process of involution the mucosa may contract about the external urinary meatus with eversion of the urethral mucosa. This delicate tissue is susceptible to injury and may also become infected. Blood stains may be noted either from injury or from infection.

10. Prolapse of the cervix exposes it to injury which may lead to abrasion or even ulceration. The cause of bleeding is obvious on inspection.

11. Stenosis of the cervix is a part of the genital atrophy of involution. As the occlusion of the cervix progresses, secretions of the endometrium may be retained. Bacteria invade the cavity through the partly occluded cervix, and endometritis may result with retention of pus—pyometra. Sometimes the pressure within the uterus reaches a point at which the purulent content is expelled; at other times the occlusion of the cervical canal may be complete, and the infectious process may be isolated in the uterus. It is believed that seepage of the irritating material from the uterus may be a cause of senile vaginitis. The alternate retention and drainage of the uterus has been known to go on for years.

12. Therapeutic bleeding is an innovation of recent years, and it is gaining in significance. Since the discovery of potent estrogens and synthetic preparations with estrogenic activity, estrogenic therapy has expanded tremendously. Even the injection of natural estrogens is no longer exclusively an office practice, for patients have been taught to treat themselves. For the most part, however, hypodermic injections remain in the hands of physicians or office nurses. With the introduction of synthetic preparations, diethylstilbestrol and related compounds, self medication is increasing rapidly, especially since the material can be purchased over the counter without prescription. Cyclic bleeding can be demonstrated in women long past the menopause by the administration of estrogens. Bleeding can be controlled and timed by planning the dose and time of administration. In many instances bleeding occurs when medication is continued at the same level without interruption. Formerly, one expected to find an organic lesion in nearly every instance of bleeding after the menopause. This is by no means true today. Analysis of the cause of premenopausal bleeding is far more difficult than it was before the use of estrogens. It has become necessary in every investigation of menopausal bleeding to determine, if possible, whether the patient has been using estrogens. Correct information regarding the material used or the dosage is often difficult to obtain. In many instances the chief gynecologic complaint is therapeutic bleeding. Emotional disturbance may be important on account of fear of cancer. Judicious use of estrogens is desirable, but thoughtful consideration should be given to the indication for prescribing them and self medication should be discouraged.

13. Carcinoma ranks first in importance among all the causes of menopausal bleeding. It is a murderous disease with an insidious onset. Hope of improving the cure rests on earlier detection of the lesion. Since almost every carcinoma of the uterus, tubes or vagina bleeds, and in many instances bleeding is an early symptom, it is axiomatic that correct interpretation of every instance of menopausal bleeding would expose the brutal invader.

Bleeding appears relatively earlier in cancer of the fundus than in that of the cervix. Nearly every cancer of the fundus bleeds early. The diagnosis may be confused by the presence of fibroids, and because the fibroids are easily felt the possibility of coexisting carcinoma may be overlooked. If irradiation is contemplated for a fibroid tumor, the possibility of cancer should be borne in mind and a thorough curettage of the uterine cavity should be performed. Even then it is possible to miss a malignant growth. Cytologic study of exfoliated cancer cells found in vaginal smears is a valuable contribution to early diagnosis. Desquamation of epithelial cells from a malignant growth is greater than from normal epithelium. Its designation as a prebiopsy method of detection is well justified.

Cancer of the cervix is treacherous because symptoms of the early stage are absent or negligible. The first symptom is leukorrhea, which is an increase of normal secretions due to hyperemia, differing from the normal only in quantity. The local blood vessels, changed by the new growth, become more permeable; plasma exudes, and the leukorrhea becomes watery. Unfortunately, this early symptom is seldom recognized. Later the small blood vessels are broken by the invasion of the growth, and traces of blood are noted particularly after coitus or following a douche. Cancer education has helped to make more women conscious of trivial bleeding. Cancer detection has disclosed many carcinomas of the cervix before appreciable symptoms appear.

14. Other miscellaneous causes of menopausal bleeding include systemic disease, endocrine disorders, particularly thyroid, nutritional disturbances, vitamin deficiencies and inorganic deficiencies, particularly calcium.

Cancer education has unquestionably made many women cancer conscious. Sometimes this is unfavorable, for it may cause profound emotional disturbances from an unfounded cancerphobia. Many women complain of bizarre symptoms that are not explained by physical observations. It has been my practice, when no objective signs are present, to remark casually, "At any rate, you know that you do not have cancer." Frequently, the patient then says, "Doctor, that is what I really wanted to know." A real opportunity for

giving comfort would be missed if one did not recognize the possibility of the patient's repression and fear to ask.

Menopausal bleeding is an important subject with many ramifications. Some of the numerous causes of bleeding have been mentioned. In each instance careful consideration of the patient as a whole is demanded. An honest effort should be made to find the true cause. Women should be encouraged to seek an explanation of every bleeding, no matter how trivial. This field offers the physician a great opportunity for giving comfort and saving life.

PANEL DISCUSSION

ARTHUR H. CURTIS, M.D., Chicago, Moderator

THE MODERATOR: In Dr. Fluhmann's absence due to illness in his family I shall ask Dr. Emil Novak, of Baltimore, to answer questions for us.

HYPERESTRINISM

QUESTION: Is equine gonadotropin used to induce ovulation in hyperestrinism?

DR. EMIL NOWAK, Baltimore: Practically all of the methods of ovarian therapy used in the treatment of functional bleeding only scratch the surface. They are directed toward the ovarian manifestation of a disturbance which is surely primarily pituitary. Dr. Fluhmann and others have emphasized in this symposium that at the bottom of this disorder is a failure of ovulation, an incomplete ovulatory cycle. If we could give the pituitary principle, equine or not, which would invariably and precisely induce ovulation, we could cure most of these patients of this particular group that we are discussing. Unfortunately, we have in gonadotropin no principle of undoubted virtue. Some years ago an article was published by two excellent gynecologists in Chicago. The belief was expressed that by giving equine gonadotropic hormone it would be possible to induce ovulation in human beings. They are now quite willing to admit the incorrectness of this. No one has as yet devised any way of making a nonovulating woman ovulate. All our present day methods of treating functional bleeding are pretty much in the nature of makeshifts. They are stopgaps, but we have to use them in women with severe and perhaps intractable bleeding. It is not altogether physiologic, perhaps, to give large doses of estrogen for the cessation of bleeding, but it does the work in a great many cases. It probably is not entirely physiologic to give a woman with decompensation digitalis, but it does the work, and we have to treat these women as sick women. The same applies to the estrogenic hormone, concerning which I feel pretty much the same as Dr. Curtis. It is not as unphysiologic, perhaps, as it may seem, but even if it were, if it tides them over until the hoped-for readjustment takes place—as it does in almost all cases—there certainly can be no criticism, especially since we have no ideal method of treatment based on the physiologic disturbance which takes place in these cases.

UTERINE BLEEDING IN PATIENTS WITH HYPERTENSION

QUESTION: Do you believe that uterine bleeding may occur in patients with essential or benign hypertension?

DR. NOVAK: I think it may, although it would be explainable on the basis of coincidence. I had not expected to say anything about hypertension. I think that perhaps Dr. Curtis ought to answer that question. I also have seen cases of otherwise unexplainable bleeding in which women happened to have hypertension. I have not felt sure that the hypertension had anything to do with it. The older men will remember discussions of uterine apoplexy. If a woman can have the hemorrhage in the brain, theoretically she could have a little hemorrhage from the uterine blood vessels, but, after all, I think that these cases are not frequent in which uterine bleeding is associated with hypertension, and we cannot be sure. I have seen several cases in my long experience, but I do not know exactly what the hypertension has to do with it.

CANCER AND HYPERTENSION

THE MODERATOR: Dr. Novak, it has been suggested by Dr. Mengert that we have a discussion among the group. I cannot help feeling that we must admit that, other things being absent, a patient who has hypertension should not have quite as certain a precurettage diagnosis of cancer as one who has not hypertension.

DR. NOVAK: Many of these patients with hypertension—the majority, I think—do have some other much more common and readily recognized cause, senile endometriosis, or something of that sort. If they take the cases numerically, that would be far more likely to be the cause of bleeding where there is no apparent cause. It is a difficult thing to prove, and I am sure that Dr. Curtis will agree, because of the fact that hypertension in the menopause is common. We cannot always make the proper diagnosis. Dr. Reynolds, do you want to say something about the possible role of hypertension?

DR. S. R. M. REYNOLDS, Baltimore: Dr. Curtis asked whether hypertension might not be a factor in uterine bleeding. Of course it could be. If the pressure is transmitted to the capillaries, capillary lakes and venous lakes that may form within the subepithelial portions of the uterus, it might contribute to the bleeding.

THE MODERATOR: It is transmitted through to the brain and causes apoplexy.

DR. REYNOLDS: Yes, of course. These are localized episodes. While I do not want to discuss hemodynamics, I might mention the fact that among the factors that govern the pressure transmitted to a terminal artery is the diameter of the branch with relation to the diameter of the stem and the angle of arterial branching. If these relationships assume abnormal proportions, one may have excessive pressure and transmission of fluid to a localized area. I did mention in my paper that hemodynamic factors concerning which we have no objective facts contribute to the menstrual process. Dr. Doris Phelps last week reported at the Association for the Study of Internal Secretions experiments in which she set up in a group of monkeys standard conditions with respect to dosage of estrogen for the purpose of inducing bleeding by deprivation of estrogen. She found that she got better consistency in her results when correlating the bleeding characteristics in any given course of injections with the previous history of bleeding and the length of time that had lapsed between the two periods, rather than the particular course of injections preceding the period of bleeding. There was therefore some controlling factor carried over from one period to the next influencing the bleeding response to a course of injections of hormone.

ROLE OF LYMPHATICS IN MENSTRUATION

QUESTION: Please repeat what you said with regard to the role of lymphatics in menstruation.

DR. REYNOLDS: The physiologic factors and morphologic characteristics of the blood vessels which I have reviewed suggest that there is something missing in our present concept of a mere vasoconstriction of endometrial coiled arterioles in the control of menstruation. We have a menstrual toxin, so called, and we have menstruation occurring in species that do not have endometrial coiled arterioles. I merely raise the possibility that there is some other common denominator for the various kinds of menstrual bleeding. It seems to me, as a working hypothesis, that menstruation may well be associated in some way with a deficient mechanism for removing transuded plasma proteins in the endometrium because of a deficient lymphatic capillary circulation. Let those of us on the experimental side take a new tack, adopt a fresh approach and see whether or not we can get some other basis on which to explain the many conflicting facts concerning menstruation from "any type of endometrium." I raise the question of lymphatics in the endometrium as a working hypothesis, rather than as a statement of fact.

BLEEDING FROM ENDOMETRIUM

QUESTION: Bleeding from hyperplastic endometrium has been discussed. Does not functional bleeding also occur from other types of endometrium, such as atrophic?

DR. NOVAK: To generalize, bleeding can occur from any kind of endometrium.

THE MODERATOR: I think this query is interlocked with the one you have now, Doctor if you will permit me to interrupt for a moment. There have been extrogenous pigmentation studies made on functional bleeding where the endometrium does not show the typical, nonsecretory Swiss cheese pattern.

DR. NOVAK: As I started to say, bleeding can occur from any kind of endometrium. Hyperplasia of the endometrium never causes uterine bleeding in itself. Hyperplasia of the endometrium is simply an expression of the growth effect of the estrogen. We have to think of the endometrium, as having two types of cycle: one, a growth cycle, and the other, the bleeding cycle. The two do not necessarily go together in parallel fashion. In many cases the bleeding spill, whatever the cause may be, may occur at a low growth level in the endometrium. In other cases, hyperplasia may be present, and be present for weeks and weeks, and the woman has no bleeding. A woman with amenorrhea of long standing may have hyperplasia, because in her case the growth level is kept up by a steady, persistent supply and there is no drop in the level to precipitate the attacks. The bleeding of the functional type, therefore, is due to an interlocking, shuttlecock sort of relation between the pituitary and the ovary. The cases of hyperplasia one finds characteristically in an ovulatory functional bleeding but, as one of these questions brings out, functional bleeding may be also of the ovulatory type. In other words, we can get a secretory endometrium in a woman who has bleeding of the functional type. These cases are much less common, and we know much less about the mechanism. We know, in fact, almost nothing. Whether it is due to imbalance between the estrogen and the progesterone, or due to some disturbance of the vascular or muscular mechanism, we can only theorize. But the simplest division to make of our functional cases is the nonovulatory group and the ovulatory group. The ovulatory group is much more common, although the nonovulatory cycle is less common than the ovulatory throughout the reproductive period of life. It is relatively common at those very periods when functional bleeding occurs—puberty and the premenopausal years. It is an aberration of the anovulatory type that causes many cases of functional bleeding.

EFFECTS OF REMOVAL OF NORMAL UTERUS ON PERSONALITY

QUESTION: Discuss the effects of promiscuous removal of comparatively normal uterus on the personality of these persons.

DR J. P. PRATT, Detroit: As the menopause approaches, it is possible to be more lax in our indications for removal of the uterus, but that does not mean giving carte blanche to remove the uterus on sight. As Dr. Norman Miller recently reviewed the results of removal of the uteri in various hospitals in three different states, he found that something like 50 per cent were removed without demonstration of pathologic lesions after they were removed. That is to be decried; there should be a good reason for removing the uterus. This question implies a psychosomatic angle which is most important. If the uterus is to be removed at any time, it should be discussed thoroughly with the woman, and she should understand in advance what it means. She should not be scared by suddenly being told after operation that her uterus has been removed.

THE MODERATOR: I am afraid I gave an erroneous impression of the therapy of radiation treatment for bleeding. We give a routine amount of radium for bleeding at or near the menopause. We resort to the massive dosage of radium only in those patients who have severe and persistent, intractable flushes; so it is a subsequent administration of radium in selected cases. It would be wrong to give a large dose of radium to every bleeding patient for whom one wished merely to stop menstruation. I wanted to call attention to the fact that if a woman after irradiation has marked flushes, one may be able to relieve those flushes through giving her more radium, such as one would give a patient with cancer.

MENOPAUSAL BLEEDING AND MALIGNANT GROWTHS

Question: What percentage of menopausal bleeding turns out to be malignant?

DR. PRATT: That would be difficult to fix, because in some regions there is a great deal more therapeutic use of estrogen than in others, and induced functional bleeding is far more common in one community than in another. Even so, the relatively smaller percentage of menopausal bleeding (by "menopausal" I mean at the time of the menopause) would be due to malignant growths. After the menopause, there is a much higher percentage, as much as 50 to 60 per cent.

THE MODERATOR: I am in accord with what Dr. Pratt has said, and I am sure that Dr. Novak is, that we must gage the amount of radium according to the patient.

LATE MENARCHE

QUESTION: A single woman 18 years old has menstruated only once, the duration of which was ten days with no clots. This menstruation was five months ago. Her mother did not menstruate until her eighteenth year and has 4 living children. Please discuss this.

DR. REYNOLDS: From the physiologic standpoint there is not much to say. This is probably a case of late menarche. It is entirely possible to have cyclic ovarian activity and not necessarily have menstruation occur. I recall the experiments of Dr. Markee, who observed the endometrial transplant in the eye of a monkey and found that there was a definite relationship between the growth cycle of the endometrium and bleeding in the transplant. Bleeding occurred only when regression or thinning of the endometrium was sufficiently rapid and adequate in amount. So one has to suppose that the menstrual mechanism, as part of the endocrine cycle, is dependent on the rate of withdrawal and so on the rate of thinning as well as the absolute amount of regression of the endometrium. In such a case as this, I think it is entirely possible, though we cannot be certain, that the ovarian hormone withdrawal phase in these persons is much less abrupt, and so the regression is less abrupt. Consequently bleeding does not take place.

CERVICAL METAPLASIA AND CARCINOMA

QUESTION: Does cervical metaplasia produce the same individual cellular morphologic change that carcinoma in situ does?

DR. NOVAK: I will say no.

USE OF RADIUM

QUESTION: What is the real objection to using radium in a young woman that curettage has failed to relieve, say 400 to 600 mg.?

THE MODERATOR: Thirty-five years ago I did a long piece of work on the pathology of the cervix. Incidentally, I mentioned the use of radium in checking discharges. Nobody paid any attention to the vital work on pathology, but they all took up with the use of small doses of radium intracervically. In doing intracervical work with a small dose of radium, such as 350, 400 or 600 millicuries, I had opportunity to note the effects on the other pelvic viscera. The use of a small dose of radium is a good deal like putting a too hot sun on Iowa corn: you get radium-sick ovaries. I beg you not to do it.

MENSTRUATION THROUGHOUT PREGNANCY

QUESTION: Some women claim to menstruate regularly throughout a normal pregnancy. What is the nature of such bleeding?

DR. NOVAK: Bleeding of that type is usually due to an adventitious factor and is not genuine menstruation. It is often due to such conditions as an eroded cervix, or a cervical polyp which bleeds at irregular intervals. In other words, the bleeding is not as periodic as perhaps the woman herself assumes. Bleeding of an apparently normal menstrual type for one period is relatively common, but it is not genuine menstruation. It is the so-called implantation bleeding which occurs when the egg burrows into the endometrium, which erodes the blood vessels which fill up the little spaces. The blood often breaks through into the uterine glands and makes its way to the surface and externally. Bleeding of this sort is usually less abundant than it is with the normal menstruation. The women who menstruate

one month, for example, after they are pregnant, will generally tell you that it is not as free as usual. Even if the bleeding is not present in macroscopic form, it is often present in microscopic form. It would probably be found to be present in a large proportion of cases. One such study has been made and bears out that impression. Whether genuine menstruation can occur is not quite so certain, but it probably can. It can on the basis of a few isolated observations. One German investigator many years ago had an opportunity to operate on pregnant woman, and by the demonstration of corpora lutei of different ages, he concluded that the periodic bleeding was of a genuine menstrual character.

VICARIOUS MENSTRUATION

THE MODERATOR: Do you believe in vicarious menstruation?

DR. NOVAK: Yes, I have seen instances—I am sure most of you have—of vicarious menstruation from the nose or from the lungs. We have not sufficient time to discuss it in detail, but I can illustrate. I had a pseudoform hermaphrodite who bled from her nose at about monthly periods, bleeding from various other cavities, and she also had large subcutaneous ecchymoses on her leg, which I could see. She did not have any vagina. She did not bleed externally. The question of the mechanism of these cases is interesting, and the question of distinction of types is interesting. Even if a woman has tuberculosis and has hemoptysis, if it comes only at the time of menstruation I think that it is vicarious menstruation. In case of such lesions in the nose, we have known for many years that there are two little areas in the nose—so-called genital tubercles—which respond to estrogen. It is not necessary to assume the presence of endometrial tissues, because on the basis of animal experimentation such as that done by such excellent investigators as Sutterman, it has been found that estrogen produces a tremendous engorgement of these so-called genital areas. At the time of menstruation it has been shown that there is an increased fragility of the blood vessels throughout the body. There was a study made some years ago on this subject. And so there is every reason to feel that the phenomenon of vicarious menstruation is a genuine one, although of course many menstruations which are not genuinely vicarious in character, in the sense of occurring at regular intervals, are sometimes loosely included under that designation.

THE MODERATOR: In confirmation of what Dr. Novak said, there is no question in my mind, from personal experience and the experience of others, that the taking of large doses of estrogens tends to increase the genital areas of the nose and thus helps to make blockage of the nasal spaces. We must beware of estrogenic medication in large amounts over a long period of time in persons with high blood pressure.

"DYSFUNCTIONAL BLEEDING"

QUESTION: From the standpoint of correct terminology, should not the term "dysfunctional bleeding" be used for "abnormal uterine bleeding?"

THE MODERATOR: "Functional bleeding" is the accepted term and, to me, is less confusing than "dysfunctional bleeding."

VAGINAL OR ABDOMINAL HYSTERECTOMY

QUESTION: Which method of hysterectomy—vaginal or abdominal?

DR. PRATT: I think that depends primarily on the operator's ability to do one better than the other. There are also definite indications for choice, such as relaxation of the vagina, making the vaginal approach easy or difficult.

TESTOSTERONE FOR FUNCTIONAL MENORRHAGIA

QUESTION: Do you give testosterone for ten days preceding the period in cases of functional menorrhagia?

THE MODERATOR: I give methyl testosterone, three tablets daily, with great bleeding, and only during the bleeding. I give two tablets daily when there is moderate bleeding and none when there is slight bleeding.

EFFECT OF ESTROGEN THERAPY

QUESTION: What is the effect of estrogen therapy on the ovaries of young girls?

DR. NOVAK: Moderate doses could cause no effect. If the dosage is excessive, ovarian function is inhibited. It is possible to convert the ovaries of an animal or a woman into functionless organs by sufficiently large doses of estrogen, but the ovary always has a tendency to bounce back, and sooner or later it will reestablish its function.

EFFECT OF ROENTGEN RAYS ON OVUM

QUESTION: Do you believe that the mutations in the fruit fly should influence the use of the only mechanism, roentgen rays, which actually induces ovulation?

DR. NOVAK: The question obviously has bearing on the controversial question as to the employment of roentgen rays in various menstrual disorders. This obviously refers particularly to the opposite condition of what we are discussing, amenorrhea and sterility. The chief work along the line of genetics has been done in animals like mice and rats. I do not know whether any of you were present at a discussion of this subject which was held at a previous Atlantic City session of this Section, and the question of roentgen treatment was under consideration. Many of us are rather concerned about it. Others, as you know, are very enthusiastic. It is true that the men who use x-ray stimulation can apparently report fairly good results, probably better than many of us can report from hormone and other therapy, and yet I think that the conservative gynecologist is a little hesitant—I know that I am—about the use of roentgen rays. We feel this conservatism chiefly on the basis of what the geneticists tell us. Dr. Little said he had not for obvious reasons been able to make experiments, but that he knew in the case of lower animals, mice or rats, that roentgen therapy of this sort would have a serious effect not on the immediate offspring but on the offspring of subsequent generations. I do not know whether that is applicable to the human being or not. I think that Dr. Little himself did not pretend to know, but such considerations must make us hesitate somewhat.

STAIN USED FOR VAGINAL SMEAR

QUESTION: What stain is used for vaginal or cervical smear?

THE MODERATOR: Dr. Papanicolaou changes his stain a little, rather frequently. I say that without criticism. He is a wonderful man.

DEFICIENCY IN COAGULATING CONSTITUENTS OF BLOOD

QUESTION: Does a deficiency in the coagulating constituents of the blood cause abnormal uterine bleeding?

THE MODERATOR: All systemic derangements are factors in causing bleeding. We have purposely ruled out all those which the internists should attend to.

ENDOMETRIOSIS AND ENDOMYOSIS

QUESTION: Kindly differentiate between endometriosis and endomyosis, and their role in functional bleeding.

DR. NOVAK: "Endomyosis" is a term with which I am not familiar. Endometriosis has no characteristic role. We will assume that the questioner means adenomyosis." Neither has an important effect in bleeding. Of course, either one can be associated with bleeding, but the bleeding in the large proportion of cases is due to an associated dysfunctional factor. Bleeding, in many cases, of the endometriosis is due to associated bleeding of the functional type. The same with endomyosis—not entirely, because we have other possible factors.

TESTOSTERONE AND ESTROGENS

QUESTON: Is testosterone going to supplant estrogens in menopause symptoms in the future?

THE MODERATOR: We do not know. The problem is in a state of flux, still confused.

SENILE VAGINITIS

QUESTION: What would your treatment be for senile vaginitis?

DR. PRATT: I would treat local infections with mild antiseptics, and in the early stages, estrogenic therapy. After adhesions are formed, there is no treatment.

"LIQUID" VERSUS "SOLID" PENICILLIN IN OIL AND WAX

The Effect of Particle Size and Type of Penicillin

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Washington, D.C.

The incorporation of penicillin in oil and beeswax has been found to be a satisfactory method of prolonging the absorption of penicillin. Romansky and Rittman,[1] the originators of the method, showed that after the injection of 300,000 units of amorphous calcium penicillin in oil and wax 70 per cent of the patients so treated had demonstrable blood concentrations of penicillin for twenty-four hours. Several modifications of the original preparation have now been made and utilized clinically.[2] Crystalline sodium and potassium as well as the amorphous calcium penicillin were found suitable for use in the mixture. Furthermore, certain preparations were devised which were fluid at room temperature and did not require heating before injection.

The liquid preparations of penicillin in oil and wax, which are fluid at room temperature (below 43.3 C. or 110 F.),[3] are now available commercially and are identical in composition with the original viscid (so called "solid") type. These preparations have been prepared by a change in their physical state only. Fluid preparations of penicillin in oil and wax are to be preferred over the more viscid ones because they are easier to administer. The viscid ("solid") preparations require heating before injection, are difficult to extract from the vials and, if administered in 1 cc. disposable syringes, are very expensive.

Because of its purity, crystalline penicillin is less likely to cause reactions than amorphous penicillin. In addition, it is more stable and can be kept at room temperature for longer periods of time than the amorphous preparations. Obviously the liquid preparations, utilizing crystalline penicillin, are preferable, if it can be demonstrated that they will produce as much prolongation of the blood penicillin concentrations as the amorphous and viscid preparations. Data furnished to the Food and Drug Administration by various manufacturers seemed to indicate that preparations of crystalline penicillin were superior to preparations of amorphous penicillin. On the other hand, there was considerable variation in the results obtained with products made by these manufacturers and, in fact, within the batches obtained from a single manufacturer. Only two reports [4] have been published concerning the ability of the liquid preparations to prolong the blood penicillin concentrations. These authors stated that when 300,000 or 600,000 units of penicillin in this form was injected intramuscularly, prolongation of its effect was not as great as had been obtained with some viscid preparations.

Because of the importance of determining which of the available preparations is the more suitable and because more data were needed to clarify these points, the present study was undertaken. A total of 252 patients in the wards of Gallinger Municipal Hospital were treated with various preparations of penicillin produced by eleven manufacturers. These preparations consisted of crystalline penicillin (sodium and potassium) and amorphous calcium penicillin in oil and wax, both in the "solid" and "liquid" forms. Each subject was given 300,000 units of penicillin in 4.8 per cent beeswax in oil contained in 1 cc. by a single intramuscular injection. Blood was collected at the twelfth, sixteenth, twentieth and twenty-fourth hour after injection. Each specimen was identified by a code number, and one half was submitted to the Antibiotic Section Laboratory, Walter Reed General Hospital, for penicillin assay by a modified Rammelkamp method.[5] The other half was sent to the Division of Penicillin Control and Immunology of the Food and Drug Administration for assay by the "subtilis" technic.[6] In the "subtilis" technic, a control was performed with each blood specimen to eliminate false readings due to the presence of an antisubtilis factor in human blood.[7]

Early in the investigation it became apparent that the size of the particles of penicillin used in preparing the liquid forms influenced considerably the prolongation of the blood penicillin concentrations. Accordingly, a method was devised for determining the relative weight of the penicillin particles. The details will be published elsewhere.[8] Preparations found by this method to contain 50 per cent or more of the total relative weight of particles measuring greater than 50 microns were classified as "large particle" preparations. Those with less than 50 per cent of the particle by relative weight in this range were classified as "small particle" preparations.

The percentage of patients showing measurable blood concentrations obtained at various intervals after injection of 300,000 units of penicillin in oil and wax in a single dose using "solid" and "liquid" preparations prepared with large or small particle amorphous or crystalline penicillin are given in the table. The percentage of subjects that showed measurable blood levels by both the Rammelkamp and "subtilis" methods are tabulated for all types of penicillin in oil and wax used. In nearly every instance penicillin was detected in a greater percentage of blood specimens by the "subtilis" technic than by the Rammelkamp method. It should be noted that the "subtilis" method is slightly more sensi-

A cooperative study by members of the George Washington Medical Division, Gallinger Municipal Hospital; the Department of Medicine, George Washington University School of Medicine; Antibiotic Section Laboratory, Walter Reed General Hospital, and the Division of Penicillin Control and Immunology, Food and Drug Administration, Federal Security Agency.

1. Romansky, M. J., and Rittman, G. E.: Penicillin Blood Levels for Twenty-Four Hours Following a Single Intramuscular Injection of Calcium Penicillin in Beeswax and Peanut Oil, New England J. Med. **129:** 940, 1945.

2. Romansky, M. J.: The Current Status of Calcium Penicillin in Beeswax and Peanut Oil: Data from a Study of 600 Cases and Clinical Observations of 4,000 Patients Given 60,000 Injections, Am. J. Med. **1:** 395, 1946.

3. If exposed to higher temperatures, these liquid preparations may solidify on cooling if not shaken.

4. Romansky,[2] Hirsh, H. L.; Dowling, H. F.; Vivino, J. J., and Rotman-Kavka, G.: Penicillin in Beeswax and Peanut Oil: A New Preparation Which Is Fluid at Room Temperature; Absorption and Therapeutic Use, J. Lab. & Clin. Med. **32:** 34, 1947.

5. Rammelkamp, C. H.: Method for Determining Concentration of Penicillin in Body Fluids and Exudates, Proc. Soc. Exper. Biol. & Med. **51:** 95, 1942.

6. Randall, W. A.; Price, C. W., and Welch, H.: The Estimation of Penicillin in Body Fluids, Science **101:** 365, 1945.

7. Chandler, V. L.; Price, C. W., and Randall, W. A.: Control and Evaluation of Blood Serum Assays for Penicillin, Science **102:** 355, 1945.

8. Chandler, V. L.; Romansky, M. J.; Welch, H.; Dowling, H. F.; Robinson, J. A.; Zeller, W. W., and Hirsh, H. L.: A Method for Determining the Size and Relative Weight of Penicillin Particles and Its Importance in Preparing Adequate Preparations of Liquid Penicillin in Oil and Wax, to be published.

tive than the Rammelkamp technic, since the Bacillus subtilis can measure a minimum of 0.03 unit of penicillin per cubic centimeter of serum, while the streptococcus used in the Rammelkamp method can measure approximately 0.039 to 0.078 unit per cubic centimeter of serum.

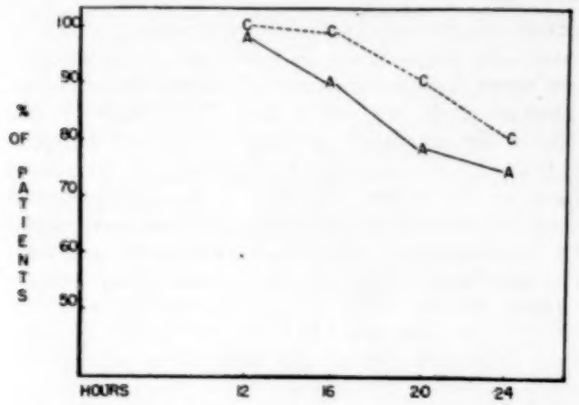


Chart 1.—Comparison of the percentage of patients with measurable blood concentration of penicillin following a singular muscular injection of 300,000 units of crystalline and amorphous penicillin in oil and wax ("subtilis" technic).

It will be seen from this table and chart 1 that when particle size and viscosity are not considered, the crystalline preparations are in general superior to the amorphous, when comparison is made on the basis of the number of subjects showing demonstrable concentrations of penicillin in the blood at various intervals after the original injection. Furthermore, each type of the crystalline mixtures was superior to the comparable type of amorphous.

From the table and chart 2 it is evident that the large particle preparations were apparently superior to those

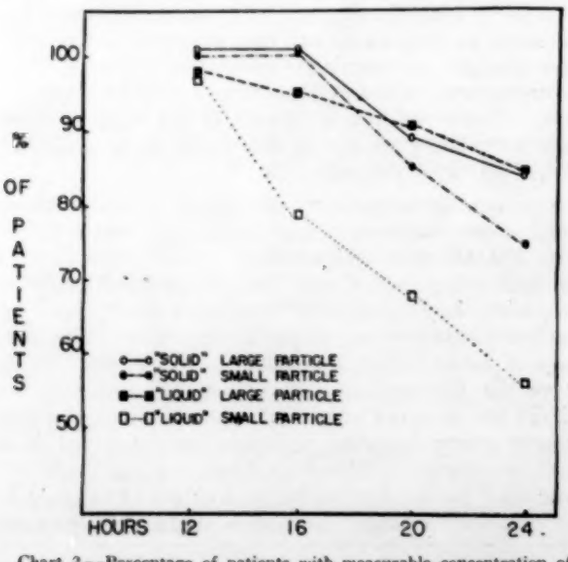


Chart 2.—Percentage of patients with measurable concentration of penicillin in the blood following the injection of 300,000 units of various types of penicillin in oil and wax.

containing small particles when "solid" preparations were used, and definitely superior to small particle preparations when the "liquid" form was used. The best liquid preparation, that which contains crystalline penicillin in large particles, is as good as the best solid preparations, namely, those which contain crystalline penicillin, whether in large or small particles.

COMMENT

The goal which the physician desires to achieve by the use of repository injections of penicillin is the maintenance of a therapeutic concentration of the antibiotic in the blood for the longest possible time. Since many preparations of penicillin in oil and wax lengthen the period during which therapeutic concentrations are present in the blood, it is desirable to determine which ones will do this best. Our investigations demonstrate that preparations made with crystalline penicillin are superior to those made with the amorphous material, provided that the particle size and the viscosity of these preparations are comparable. Furthermore, liquid preparations are as good as the viscid ("solid") preparations if 50 per cent or more of the total relative weight of the particles consists of measurable particles greater than 50 microns. Liquid preparations containing penicillin of smaller average particle size than

Percentage of Patients with Measurable Blood Concentrations Following a Single Intramuscular Injection of 300,000 Units of Penicillin in Oil and Wax

Type of Penicillin in Oil and Wax	No. of Patients	Blood Levels of Penicillin: 12 Hours Subtilis	12 Hours Rammelkamp	16 Hours Subtilis	16 Hours Rammelkamp	20 Hours Subtilis	20 Hours Rammelkamp	24 Hours Subtilis	24 Hours Rammelkamp
"Solid"									
Large particle:									
Amorphous	20	100	90	100	73	90	65	80	47
Crystalline	20	100	90	100	88	88	84	90	70
Small particle:									
Amorphous	48*	100	98	100	90	83	63	71	50
Crystalline	19	100	100	100	94	94	90	90	66
"Liquid"									
Large particle:									
Amorphous	34	97	86	94	67	85	54	82	34
Crystalline	37†	100	97	100	97	100	97	92	89
Small particle:									
Amorphous	50*	96	71	75	56	65	30	41	14
Crystalline	24	100	96	91	82	83	81	56	43

* Of the 48 and 50 patients in these two groups, the bloods of 6 and 5 patients, respectively, were not assayed by the Rammelkamp technic.

† Of the 37 patients in this group, the bloods of only 11 were assayed by the "subtilis" method.

this, whether amorphous or crystalline, are definitely inferior to the solid preparations. Since the liquid preparations are easier to administer, it is obvious that they will be the preparations of choice.

It should be emphasized, however, that the precautions observed for the "solid" preparations, namely, those concerning the use of dry needles and syringes and deep intramuscular injections, should be followed when the fluid preparations are employed. In addition, the fluid preparations must be shaken vigorously before use.

Preparations containing crystalline penicillin, which is more highly purified, can be stored at room temperature for eighteen months as compared with only twelve months for the amorphous material. In addition, they give therapeutically significant blood concentrations for longer periods than the preparations containing amorphous penicillin. For these reasons crystalline will be preferred to amorphous preparations.

SUMMARY AND CONCLUSIONS

Various preparations of penicillin in oil and wax, crystalline and amorphous, "solid" (viscous) and "liquid," those with large particles and those with smaller particles of penicillin, have been studied by giving a single intramuscular injection containing

300,000 units to patients and then determining the concentrations of penicillin in the blood at twelve, sixteen, twenty and twenty-four hours after the injection.

Preparations of crystalline penicillin in oil and wax were superior to preparations which were comparable in other respects but which contained amorphous penicillin. Solid preparations gave optimal results, if crystalline penicillin was used, whether the particles were of large or small size; or, if amorphous penicillin was used, when the particles were of large size. Liquid preparations gave optimal results if crystalline penicillin of large particle size was used and almost as good results with amorphous penicillin of large particle size. Liquid preparations containing penicillin of small particle size, whether amorphous or crystalline, gave definitely inferior results.

On the basis of ease of administration as well as on the concentrations of penicillin achieved in the blood, the liquid preparations of crystalline penicillin of large particle size are recommended as the most satisfactory form of penicillin in oil and wax.

Special Article

MULTIPLE SCLEROSIS

Diagnosis and Treatment

NATIONAL MULTIPLE SCLEROSIS SOCIETY
New York

MINIMUM STANDARDS OF DIAGNOSIS

The essential criteria of diagnosis of multiple sclerosis are evidences of lesions affecting white matter chiefly, scattered in time and space (that is, repetitive attacks which often give the disease a recurrent regressive and progressive character). Ordinarily, the diagnosis cannot be made unless there is evidence of more than one lesion or unless there are confirmatory findings in the spinal fluid, but characteristic symptoms such as retrobulbar neuritis with central scotoma, symptoms of acute transverse myelitis, diplopia or blurred vision or weakness or numbness of one extremity, if transient, create a presumption for the diagnosis. This presumption is strengthened if one or more of the common physical findings is present, such as palsy of one of the oculomotor nerves, nystagmus, slight ataxia of the arms, absent abdominal reflexes or Babinski or Oppenheim signs.

In addition to the foregoing manifestations the following are frequently found: difficulty in speech, monoparesis or hemiparesis, spastic paraplegia, spastic-ataxic gait, vertigo, intention tremor, frequency and urgency of urination, impotence, constipation, girdle sensations and other paresthesias, loss of vibration and position sense and general weakness.

Some type of alteration in the spinal fluid is found in about 70 per cent of cases. These include a moderate increase of cells (10 to 100), increase of total protein and alterations in the gold-sol curve (which should always be performed in suspected cases).

Uncommon manifestations are papilledema, psychoses, trigeminal and other types of neuralgia, facial palsy, headache, aphasia, hemianopia and convulsions.

Multiple sclerosis usually begins between the ages of 20 and 40 but is not excluded by an onset before or after these limits. The symptoms are often precipitated by infection, by emotional tension or pronounced fatigue and sometimes by pregnancy, and if so, the diagnosis is rendered more probable.

A steadily progressing disability or one limited to the lower extremities calls for caution in diagnosis. In doubtful cases neurosyphilis, neoplasm, subacute combined sclerosis and hereditary ataxia must be considered.

When the sensory symptoms are decidedly pronounced, hysteria is occasionally mistakenly diagnosed.

The accompanying table, modified from Sachs and Friedman, is often of value:

Symptoms and Signs Enumerated in the Order of the Frequency of Their Occurrence

Total number of cases studied 141 (male cases 77, female 64)

		Cases	Per Cent
1	Abdominal wall reflexes decidedly diminished or absent	118	83.7
2	Chief complaint weakness and stiffness of one or both lower extremities	115	81.7
3	Nystagmus (chiefly horizontal)	99	70.0
	Horizontal and vertical	17	12.0
	Horizontal and rotary	3	2.0
4	Babinski's sign present bilaterally	94	67.0
	Unilaterally	16	11.3
5	Tremor present in extremities alone	78	55.3
	Tremor of the head also	31	22.0
6	Ataxia and adiadokokinesis	66	47.0
7	Deep reflexes in the lower extremities increased	126	90.0
	Ankle clonus	61	43.0
	Patellar clonus	29	20.5
	In 3 instances the knee jerks were diminished (tabetic type)		
8	History of one or more remissions	59	42.0
9	Bladder symptoms	57	40.0
	Urgency	18	12.6
	Delay in starting urinary stream alone or in combination with urgency in 28 cases and incontinence in 21 cases		
10	Speech hesitant or otherwise disturbed	51	36.0
11	Gait spastic	43	30.0
	Spastic ataxic	46	32.6
	Ataxic alone	15	10.6
12	Evidence of facial weakness (other cranial nerves very much less involved)	46	32.6
	Tongue deviated to the right	14	10.0
	Difficulty in swallowing	5	3.5
	Uvula drawn to one side	4	2.8
	Cochlear nerve involved	3	2.0
	Vestibular nerve showed no response to stimulation	2	1.4
	Ocular muscles:		
	Internal rectus involved	6	4.3
	Ptosis	2	1.4
	External rectus involved	3	2.8
13	Temporal atrophy	46	32.6
	Blurring of the disks or mild optic neuritis	11	7.8
	Vision impaired without objective disk findings	25	17.7
14	Pain, numbness and tingling	43	30.0
	Objective disturbances in posterior column sensation	24	17.0
	Mild changes in pain, temperature and touch perception (including cases with hyperalgesic zones)	23	16.3
	Astereognosis	5	3.5
15	History of diplopia	31	29.0
16	Cremasteric reflexes diminished (males)	17	22.0
17	Mental changes (largely those of mental infantilism and signs of neurosis or neurasthenia; 1 patient was in a state hospital with the diagnosis of dementia precox; 1 patient showed the picture of Korsakoff's psychosis)	22	15.8
18	Emotional instability with explosive laughter	24	17.0
	Defects of memory	7	5.0
19	Spinal tenderness (chiefly middorsal)	17	12.0
20	History of trauma	14	10.0
21	Pupillary disturbances rare:		
	Pupils irregular	6	4.3
	Slightly sluggish to light	12	8.5
	Anisocoria	16	11.3
22	History of pronounced dizziness	12	8.5
23	Disturbances of potency	6	4.3
	(No disturbances in rectal control in any cases)		

TREATMENT

There is no agreement among neurologists in regard to the cause of multiple sclerosis; hence, no specific treatment directed at its cause is generally accepted. Many purely empiric treatments have been described. Since none of them have been shown by adequate statistical method to influence the course of the disease, they

Prepared by qualified members of neurologists and approved by the Medical Advisory Board of the National Multiple Sclerosis Society, an association for advancement of research on multiple sclerosis, Academy of Medicine Building, Fifth Avenue and 103d Street.

will not be detailed here. An account of them may be found in Brickner's article (*Bull. Neurol. Inst.*, New York. **4**: 655, 1936), and an analysis of the results in an article by Putnam (THE JOURNAL, June 17, 1939, p. 2488).

There are certain natural limitations to all forms of treatment in multiple sclerosis. Recent pathologic studies have made it clear that a large proportion of axis-cylinders are often destroyed in the acute phase of the disease process; as the acute phase passes by, a certain tendency to recovery can usually be observed. The larger the lesion and the longer the disease has continued, the more severe the damage to axons. Any useful regeneration of axis-cylinders in the central nervous system is at present inconceivable. Possibly the formation or growth of lesions might be prevented by avoiding precipitating factors or counteracting the disease process; possibly mildly damaged nerve elements might be restored by some alteration in nutrition or circulation, and certainly some long-standing symptoms may be alleviated, for example, by relaxation exercises and retraining, which obviously have no beneficial effect on the disease itself. Whatever course of treatment is chosen in a given case, the physician should always bear in mind its rationale and should not expect more of it than it can conceivably accomplish.

I. MORALE BUILDING

Inasmuch as there is no satisfactory specific treatment for multiple sclerosis the physician must approach the problem somewhat obliquely. These patients are in a situation which they consider threatening and have a strong need for someone on whom they can be dependent. This constitutes a large part of the treatment responsibility. The physician can best serve the patient as a wise counselor who helps to relieve anxiety, to work out ways of overcoming physical handicaps and to develop positive interests which make the situation more tolerable. Since new symptoms often appear in a setting of anxiety and tension, a relief of these anxieties may help to prevent further progress of this disease. This approach to the problem may be called morale building.

Morale building should be constantly in the mind of the physician, because the most insignificant attitude displayed to the patient may be of profound importance in either a positive or a negative direction. The physician should first define his own attitude toward the disease. If possible he should assume a mature perspective which is realistic but takes into account plastic features as well as those which are unmodifiable. The physician who has responsibility for therapy is confronted by a double problem of treating the disease itself and treating the patient, or, more precisely, treating the problem which the disease represents to the patient. The problem is to aid the patient to deal with the disease in an effective manner. The most helpful attitude is to consider that this disease, as any serious life problem, presents a challenge which the patient needs to meet effectively. Though the disease is a serious liability, which need not and cannot be minimized, there is available to the patient the satisfaction of coping with and "overcoming" the liability.

Before informing a patient concerning specific features of the disease and factors which are likely to bring on new symptoms, it is wise to estimate the patient's capacity for dealing effectively with anxiety. Otherwise new fears may be introduced which will only aggravate the situation. After a good patient-physician relationship has been established palliative drugs may have beneficial value out of all proportion to the value of the drug itself. This good relationship is easy to establish, for the patient is seeking frantically for some understanding person who is willing to listen to his problem. The function of the physician is to listen in an understanding way and to give a minimum of directive advice. The physician should rather assist the patient to arrive at his own conclusions. By sympathetic listening the physician helps the patient bring into sharper focus his own plans for dealing with the illness in a constructive way.

The forms of treatment at present in use may be divided into: (1) those aimed at recognized precipitating factors (including climatic treatment); (2) those founded on current theories of the etiologic basis of the disease, and (3) those aimed at alleviating individual symptoms.

II. AVOIDANCE OF PRECIPITATING FACTORS

The usual list of circumstances which may precipitate attacks is as follows: infections, unfavorable climate, pregnancy, fatigue, poor nutrition, emotional disturbances and chilling.

Infections.—The effect of acute infections, such as the common respiratory infections, boils and paronychias, is often striking. In every case a search for foci of infection, such as sinusitis, tonsillitis, infected teeth and prostatitis, should be instituted and the focus dealt with if possible. Avoidance of infections is desirable but difficult to attain. Probably the influence of climate lies chiefly in its influence on incidence of infections.

Climate.—Multiple sclerosis appears to be a disease of cold, damp climates. It is commonest in northern Great Britain, the Baltic countries and certain areas of the United States (the northern Atlantic coast, the Great Lakes states and the northern plains). It is apparently relatively infrequent in the Mediterranean countries and in the Southern and Southwestern states. It seems to be almost unknown in China and Japan. Patients afflicted with multiple sclerosis often complain that in cold or damp weather their symptoms are more pronounced. Patients who move from an unfavorable climate to a mild, dry one such as exists in the Southwestern area of the United States (Arizona, Northern Texas, New Mexico, Colorado, Southern California) are often relatively free from acute relapses and may go into a remission. Further statistical studies on this point are being made by the Society.

Pregnancy.—The onset of multiple sclerosis, or relapses, are precipitated in about 40 per cent of female patients who become pregnant. Measures to be taken are obvious.

Fatigue, Poor Nutrition, Emotional Disturbances, Chilling.—Relapses sometimes seem to be precipitated in persons suffering from multiple sclerosis by periods of overwork, long automobile rides and exposure to cold. Severe reducing diets, carbohydrate "sprees" and other dietary vagaries sometimes seem to have a disadvantageous effect. There is, however, no good evidence that any specific dietary factor—e. g., presence of vitamins—has a bearing on the disease. Indeed, it is rarest in some regions in which vitamin deficiencies

are most frequently observed, but care should be taken that the patient has a better than average diet and the best possible living conditions. Emotional disturbances and emotional tension in particular are apt to precipitate attacks. Whatever can be done should be done to maintain as calm an emotional level as possible.

Injury.—The role of injury in the causation of multiple sclerosis is hard to assess, and avoidance of injury is difficult to attain. It should be considered, however, in planning the lives of patients. Sometimes even such trifling trauma as lumbar puncture or venipuncture may appear to precipitate attacks.

III. REHABILITATION AND SYMPTOMATIC TREATMENT

Physical Therapy.—Excellent results have apparently been obtained in a number of cases of chronic multiple sclerosis by muscular reeducation. However, rehabilitation in chronic multiple sclerosis is difficult and may be impossible in the severely involved patient who has been confined to bed or a wheelchair for a number of years. The approach to therapy has been to attempt to restore function by development of substitute motor pathways in the central nervous system. Treatment at one institute devoted to physical therapy consists of daily administration of neostigmine in large dosage and daily intensive muscle reeducation with specialized carefully prescribed resistance exercises.

The following recommendations are made as the result of the experience obtained in the Department of Rehabilitation and Physical Medicine, Bellevue Hospital, New York:

The methods which have been found useful in disabilities which limit motions at the joints, weakness, spasticity, rigidity and incoordination of muscles are the physical modalities heat, water, massage and therapeutic exercise. Therefore the use of physical and occupational therapy and rehabilitation procedures is useful in the symptomatic treatment of multiple sclerosis.

Before planning a program for patients with multiple sclerosis it is essential that a physical therapeutist evaluate joint motion and muscle strength and function.

1. *Joint Motion.*—Every joint has a specific number of movements and range of motion. The therapeutist should test each joint to discover if there are any limitations of motion and the extent of the limitation.

2. *Muscle Test.*—The therapeutist should also give a muscle test, as is done in poliomyelitis, in order to discover the muscle groups which are paralyzed, weak, spastic or rigid. Muscle tests repeated over a period of months will give valuable information on the progress of the disease or results of the treatment.

3. *Functional Activities Test.*—The functional activities test consists of activities essential for daily living. A detailed classification of activities essential for daily living which is in use in the Department of Rehabilitation and Physical Medicine, Bellevue Hospital, can be obtained from that hospital on request. This test evaluates what the patient can do with his disability in performing activities which require movements at the joints, muscle power and coordination. When the physician has these evaluations he is prepared to plan a program best adapted to meet the physical needs of the patient.

Treatment of Disabilities.—The following physical modalities are used in treating the disabilities resulting from multiple sclerosis:

1. Massage: The movements employed in massage are useful in accelerating the flow of blood in the skin, subcutaneous tissue and muscles. Massage is also useful in producing a sedative effect on the nervous system, thus relieving spasm and rigidity of the muscles.

2. Hydrotherapy: Warm baths tend to produce relaxation of the muscles and relieve pain.

3. Exercise: There is no form of physical therapy as useful in the treatment of patients with multiple sclerosis as active and passive movements. By means of such exercises the movements of the joints as well as the strength of muscles and coordination may be maintained and increased.

(*a*) Passive movements are useful in overcoming spasticity and contractures of the muscles, adhesions in the joints and tightening of the ligaments. They prevent deformities which may interfere with use of the extremities should remissions occur.

(*b*) Active movements and the arts and crafts activities are used by the therapeutist to strengthen the muscle groups which are below normal to prevent atrophy from disuse and to maintain or reestablish coordination.

OTHER FORMS OF SYMPTOMATIC TREATMENT

Curare.—The usefulness of curare in multiple sclerosis is limited to those cases exhibiting spasticity. Where indicated, its therapeutic value may be twofold. First, the reduction in hyperactive stretch reflex (characteristic of spasticity) may unmask the patient's remaining motor power by increasing the efficiency of motor management. Second, the lessening of spasticity may permit increased range of motion and, coupled with competent physiotherapy, prevent contractures incident to prolonged abnormal postures.

In cases in which spasticity is associated with good voluntary power, curare therapy along with adequate reeducation may yield striking rehabilitative results. On the other hand, in cases in which voluntary strength is at a minimum the limbs will adopt a position dependent on the strongest muscle groups in spite of reduction in hyperirritability of the stretch reflex. In such instances, administration of a preparation of curare along with frequent passive motion may be of value in preventing or overcoming contractures. In some patients the use of curare appears to increase fatigue.

Two types of drugs are in use: aqueous tubocurarine, which is a crystalline derivative of crude curare, and a suspension of d-tubocurarine chloride in oil and wax. The former has the disadvantage of evanescent effect and possibly a narrower therapeutic margin; use of the latter, while showing more promise in the treatment of chronic states, is still frankly experimental. The rationale in the use of this drug is based on its ability to create a partial neuromuscular block. This may be a different physiologic mechanism from the purely paralytic effect achieved with larger doses.

Curare is known to have histaminic side effects. These occur in about 10 per cent of the cases and are ordinarily not troublesome and do not require special care. However, subjective vertigo is sometimes seen, and this in the presence of ataxia may eliminate the drug as a therapeutic choice in a given case. No tolerance has been seen to develop, and over long periods of time there has been no demonstrable effect on bodily economy. Curare is, of course, a potentially dangerous drug, and several deaths have been attributed to its use. It should be prescribed only by physicians who have had experience with its actions, and a supply of neostigmine, its physiologic antidote, should be kept available.

Neostigmine.—Neostigmine has been used much in the manner recommended in the preceding section for curare. This is curious, because the two drugs have

pharmacologically opposed actions. Neostigmine was originally prepared as an antidote to curare.

Miscellaneous Agents.—Various drugs, such as amphetamine, dextro-amphetamine ("dexedrine"), diphenhydramine ("benadryl") and tripelennamine ("pyribenzamine") have been used in the treatment of chronic cases and have occasionally appeared to give symptomatic relief.

Antireticulocytotoxic serum (A.C.S.) is under trial, and results will be reported when the tests are completed.

Vitamins have been extensively used. In some cases they seem to have a tonic effect, and their use is definitely indicated if any signs of actual deficiency, such as redness of the tongue, rhagades, anemia and dryness of the skin and hair, appear. They do not appear to have any specific effect on the course of the disease in well nourished patients.

Treatment of Other Symptoms.—Constipation: Constipation is a common concomitant of multiple sclerosis. It may be treated by laxatives; diets; the use of agar-oil mixtures or mucilaginous laxatives, or by such mixtures as figs, senna and prunes. Salts and drastic cathartics should be avoided if possible. Enemas are often necessary.

Urinary Retention and Incontinence: Frequency and urgency of urination may often be helped by moderate doses of tincture of hyocyamus or other antispasmodics, such as "trasentin" (the hydrochloride of diphenylacetyldiethylaminoethanol).

Urinary infection should be vigorously combated, as it tends to cause progression of the disease. Use of forced fluids and antiseptics, such as sulfadiazine by mouth, may be all that is necessary. The use of tidal drainage should be employed if the infection is rebellious or if the bladder is fibrotic and contracted.

In prescribing the indicated forms of therapy the physician must be guided by the knowledge of the disease which the patient has, as well as by his own knowledge of the patient who has the disease.

IV. TREATMENTS FOUNDED ON CURRENT THEORIES OF THE DISEASE

1. *Treatments Aimed at Possible Specific Infections.*—The idea that multiple sclerosis is the result of a specific infection, for example, by a spirochete or virus, is now an old one, which is revived from time to time. The disease has therefore been treated by many antibiotic substances, such as arsphenamine and its modifications, "germanin" (suramin sodium U. S. P.), silver salts, iodides and penicillin, but without obvious results. Fever treatment has also been generally abandoned, as has the use of various vaccines.

2. *Treatments Based on the Theory of Vascular Spasm or Thrombosis.*—A. "Dicumarol": Based on accumulating evidence which suggests the possibility that vascular obstruction, probably a thrombosis of venules, is a link in the chain of causation of multiple sclerosis, "dicumarol," an anticoagulant, has been used in certain cases. Most of the chronic progressive cases treated with this drug continued their downward course.

1. In view of the special and important technical knowledge and skill required in the use of "dicumarol," the physician in charge should be instructed in the purpose, method and dangers of the treatment (much as in insulin treatment of diabetes) before attempting its use. It should be constantly pointed out to all concerned that the treatment cannot be expected to produce improvement of symptoms but appears merely to afford protection against serious future outbreaks. The danger of hemorrhage, and the steps to be taken should it occur, should be particularly emphasized. The patient should understand that the treatment apparently confers relative protection only while it is being adequately administered and that it will probably have to be continued the rest of his life.

2. Before starting the treatment, the physician in charge should assure himself that reliable determinations of the prothrombin time can be secured as often as necessary. The method of Shapiro and associates is considered as the most reliable one for the prothrombin time, and thromboplastin is the preparation used. In this method the clotting time of plasma diluted 1:8 is determined, as well as that of undiluted plasma. The normal prothrombin times obtained by this method are 18 ± 3 seconds for undiluted plasma and 40 ± 10 seconds for the diluted sample of plasma.

The prothrombin time is determined before treatment is begun, twice the first week, weekly for the next month, then every two or three weeks. Dosage of "dicumarol" is regulated to stabilize the prothrombin time of the undiluted plasma around thirty seconds. If the clotting time of whole plasma rises to forty seconds or that of diluted plasma to more than one hundred and twenty seconds, the dose should be omitted for at least four days, then begun at a lower level.

3. The usual initial dose of "dicumarol" is 150 mg. This is immediately cut down to 50 mg. daily, until a proper prothrombin time is reached. Fifty milligrams of the drug can then be given every other day until the prothrombin time drops below thirty seconds, when the dosage is increased again.

4. If hematuria occurs, administration of "dicumarol" should at once be stopped and the patient put to bed. A transfusion should be given within twenty-four hours. In stubborn cases repeated transfusions, as many as five, have been found necessary. Administration of vitamin K, even intravenously, has not seemed to be of immediate benefit.

Instruction in the use of "dicumarol" can be obtained from E. R. Squibb & Sons, 745 Fifth Avenue, New York. It must be emphasized that the use of "dicumarol" is still in the experimental stage.

B. Vasodilating Drugs (Other than Histamine): In many cases of multiple sclerosis there are constrictions of the retinal arterioles, with which there are usually associated scotomas and sometimes also a reduction in visual acuity. In most cases in which they were employed, fast acting vasodilating drugs have caused prompt, temporary reduction of the constrictions and of the size of the scotomas (sometimes to zero) and in several instances an increase of visual acuity as well, although the results were not entirely uniform. The inhalation of amyl nitrite almost uniformly produced general retinal vasodilation, and intravenous injections of papaverine hydrochloride sometimes appeared to produce general vasodilation and sometimes not.

Both drugs caused alleviation of scotomas. No clear-cut and indisputable effects in the course of the disease were observed as the result of orally administered vasodilating drugs over a period. The use of vasodilating drugs as a means of long term treatment is still in early experimental stages, despite the fact that under the experimental conditions previously mentioned such drugs, when administered so as to act rapidly and suddenly, may give transient beneficial results. The drugs now in oral use are aminophylline, "syntropan" N. N. R. and papaverine hydrochloride in tolerance doses.

As will be pointed out later, histamine is a valuable vasodilator. A great defect in its use in multiple

sclerosis is the brevity of the period of vasodilatation. Theoretically, good vasodilation should be maintained twenty-four hours a day. Histamine may be given as a continuous infusion, but this limits the activity of the patient, a factor which may be disadvantageous if continued over a long period. When employed daily by brief infusion, histamine may be combined with the aforenamed orally administered drugs.

C. Histamine: Because frequent exacerbations and remissions are characteristic of this disease, evaluation of therapy is difficult. Under the circumstances, it is believed that histamine therapy cannot be adequately evaluated until more time has elapsed. Early diagnosis is important if any new treatment is to be tried and appraised. Later gliosis and irreversible changes take place that no type of treatment will alter.

The procedure which is employed at Mayo Clinic is as follows:

Add 2.75 mg. histamine diphosphate to 250 cc. isotonic sodium chloride solution. This solution is given intravenously by the drip method, beginning at a rate of approximately 20 drops per minute; however, the rate of administration depends entirely on the individual's tolerance. At no time should the patient experience any discomfort from the use of this drug. We limit the time for each treatment to a maximum of one and one-half hours and do not administer more than 250 cc. of the solution at a given treatment. In each instance, the response to treatment is watched carefully and the schedule adjusted accordingly. After daily treatment for a period of two weeks, the patient may notice some weakness and fatigue. This is usually an indication of overtreatment, in which case we reduced the length of treatment or administer the solution only on alternate days. Some are under treatment for a period of weeks—others for a period of months. Patients are usually ambulatory. It is well known that histamine stimulates the gastric acids; hence, it is important that the patient have food in his stomach at the time of administration of the drug. This treatment is carried out without danger and is easily administered. Since we began this work in 1942, we have given over fifty-five thousand intravenous histamine injections without any untoward effects. Reactions have not occurred, even though we have administered as many as five hundred and sixty-one such injections to a given subject. Repeated injections do not change the patient's tolerance to the drug.

In man, histamine dilates the arterioles, venules and capillaries. Recently we have had occasion to study and to confirm these observations on the human brain. Furthermore, we have been able to demonstrate that histamine is the most powerful vasodilating agent available for increasing blood supply to the central nervous system; hence the rationale for its use in subjects with multiple sclerosis.

D. Sympathectomy: This form of treatment, founded on the vascular theory of multiple sclerosis, has apparently been abandoned.

COMMENT

The foregoing information has been prepared by members of and approved by the Medical Advisory Board of the National Multiple Sclerosis Society. It is designed to furnish to physicians the best information available at the present time, but the Society assumes no responsibility whatsoever for the accuracy or the completeness of the information or for any consequences of its use. The Society will be pleased to give any physician who requests it the benefit of any references where more details can be found and will be glad at all times to furnish any further information that may come to it as to the diagnosis of or the treatment of multiple sclerosis.

Clinical Notes, Suggestions and New Instruments

CUTANEOUS STAINS REMOVED WITH CHEMICAL DEPILATORIES

THEODORE CORNBLEET, M.D.
Chicago

Some valuable remedies for the treatment of the skin suffer from the disadvantage that they cause discoloration. Thus, solutions of potassium permanganate and of gentian violet medicinal are frequently used but leave unsightly blemishes that limit their usefulness. After their application to the nail weeks are required before growth is sufficient to displace them. It takes days for the discoloration of the skin to wear off.

There are a relatively few substances, such as the steroid hormones and several other materials, which can penetrate the epidermis of the skin. The rest are incapable of going beyond the keratin layer, usually not deeper than the outer two or three cell layers of the keratin. This can be demonstrated most easily visually with staining materials.

Most chemical depilatories take advantage of the fact that the alkaline sulfides are capable of softening and dissolving keratin. This protein material accounts in large part for the structure of the hair, the nails and the outer layer of the epidermis. Therefore, when one applies a depilatory for the removal of hair it acts not only on these keratin filaments but also on the surface of the skin between them. If the procedure is properly carried out with a good product, the hairs and a little of the outermost layer of the epidermis are removed without irritation. It takes longer to dissolve away the hair than it does to remove the outer two or three cell layers of the skin. Consequently, if one wants to remove merely the latter, less time is necessary and there is even less chance for irritation to develop. By test, it was determined that the removal of the outer cuticle, or that part discolored by staining materials, required only about half the time needed to dissolve hair. Thus the commercial chemical depilatories "neet," and "sleek" require about five minutes to remove cutaneous stains. It takes a little longer to clear the nails, but these more rugged structures can stand severer treatment. Cutaneous discolorations are thus easily and safely removed. For stains on hair it is better to make up a dilute solution of a sulfide, such as the calcium, which is to be applied for extremely short intervals and followed by rinsing. The procedure is to be repeated until one obtains the desired effect. Great care and some experience is needed to remove the stains and to leave the hair intact.

The preceding method has been found useful for the removal of adherent scales and crusts, which sometimes remain for a while after a dermatitis has subsided. This method must not be used on areas of active dermatologic lesions unless they are chronic and hyperkeratotic. It can be used on healed sites of impetigo or other dermatoses which remain discolored by a medicament. This method is applicable temporarily to some degree on areas discolored by saprophytic fungi, as in pityriasis versicolor and erythrasma. In some of my unpublished work sulfides have been found decidedly effective against yeasts and certain other fungi. In most of the superficial fungous infections the follicles become involved. The chemical depilatories cannot plumb these structures effectively in the short time that they are permitted to remain on the skin. Further observations, however, are being made to explore these possibilities. Pigmentary stains of the skin, such as those which follow an inflammation, are too deeply imbedded and cannot be removed by this method.

SUMMARY

Chemical depilatories have been proved effective in the removal of stains, such as those made by solutions of potassium permanganate and of gentian violet medicinal, from the skin and nails. Removing the very surface of the skin removes the stain.

1819 West Polk Street.

From the Department of Dermatology, University of Illinois College of Medicine, and the Cook County Hospital.

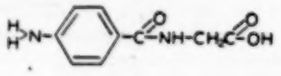
Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M.D., *Secretary.*

PARA-AMINOHIPPURIC ACID.—4-aminobenzoylglycine.—The N-acetic acid amide of para-aminobenzoic acid.—$C_9H_{10}N_2O_3$.—M. W. 194.186. The structural formula of para-aminohippuric acid may be represented as follows:



Actions and Uses.—Sodium para-aminohippurate is excreted by the tubular epithelium of the kidneys in addition to being filtered by the glomerulus. It may be used to measure the effective renal plasma flow and to determine the functional capacity of the tubular excretory mechanism. To measure renal plasma flow, low plasma concentrations (1.0 to 2.0 mg. per hundred cubic centimeters) are necessary. At these concentrations 88 per cent of this compound is removed from the renal blood stream in a single circulation. The normal effective renal plasma flow is 697 ± 135.9 cc. per minute for men and 594 + 102.4 cc. per minute for women. This test cannot be applied to patients receiving sulfonamide compounds, because these develop color with the reagents used in the test.

To determine the functional capacity of the tubular excretory mechanism high plasma concentrations (above 60 mg. per hundred cubic centimeters) of sodium para-aminohippurate must be used. The normal mean value of the "tubular excretory mass" is 77.5 ± 12.9 mg. per minute.

Method of Application.—To Determine Effective Renal Plasma Flow: Sterile solution of sodium para-aminohippurate is injected intravenously in a volume sufficient to produce approximately 2 mg. of para-aminohippurate per hundred cubic centimeters of blood plasma. At this plasma level all the para-aminohippurate in the blood that passes through the kidney is removed and appears in the urine. The urine formed during a definite but relatively short period is collected, and the average amount of para-aminohippurate eliminated is calculated in milligrams per minute. This value divided by the para-aminohippurate content of the plasma in milligrams per cubic centimeter is equivalent to the number of cubic centimeters of plasma per minute that must have passed through the kidneys (effective renal plasma flow).

To Determine Tubular Excretory Mass: Sterile solution of sodium para-aminohippurate is injected intravenously in a volume sufficient to "saturate" the capacity of the tubular cells to excrete para-aminohippurate (above 60 mg. per hundred cubic centimeters of plasma), and the para-aminohippurate content of the plasma is determined in milligrams per cubic centimeter. The amount excreted in the urine is determined in milligrams per minute, this value including both glomerular filtration and tubular excretion. The glomerular filtration rate, using mannitol, a compound that is filtered only through the glomerulus, is determined in cubic centimeters per minute (see description of Sterile Solution of Mannitol). From the glomerular filtration rate and the para-aminohippurate content per cubic centimeter of plasma is calculated the amount of para-aminohippurate that was filtered through the glomeruli in one minute (cc./min. × mg./cc.). Then the total number of milligrams excreted in the urine per minute minus that amount filtered through the glomeruli per minute equals the amount of para-aminohippurate in milligrams per minute excreted by the tubules (tubular excretory mass).

Tests and Standards.—

Para-aminohippuric acid occurs as a white, crystalline powder. It melts at 197.5 to 199 C. It is sparingly soluble in water and alcohol and very slightly soluble in benzene, in chloroform and in ether.

Dissolve 0.1 Gm. of para-aminohippuric acid in 50 cc. of water. Add to 5 cc. of this solution 0.5 cc. of dilute hydrochloric acid and 0.5 cc. of 10 per cent sodium nitrite; then add 10 cc. of diluted ammonia solution containing 0.2 Gm. of betanaphthol: a red color develops in the solution.

Place 50 mg. of para-aminohippuric acid in a test tube and add 0.5 cc. of potassium iodide solution, followed by 2 cc. of water. Add 1 cc. of 5 per cent sodium hypochlorite solution: a red color develops in the solution *(distinction from para-aminobenzoic acid).*

Add 0.45 Gm. of para-aminohippuric acid, 0.2 Gm. of freshly fused sodium acetate, 0.25 Gm. of benzaldehyde and 0.75 Gm. of acetic anhydride to a 25 cc. Erlenmeyer flask. Place on a hot plate and shake the flask constantly until the material becomes liquid. Remove the flask immediately; cool, suspend in 10 cc. of water and filter. Wash the crystals with about 10 cc. of alcohol and then with 10 cc. of ether; the dry crystals melt at 236 to 238 C.

Dissolve 1 Gm. of para-aminohippuric acid in a mixture of 10 cc. of normal sodium hydroxide and 40 cc. of distilled water. Add to 25 cc. of the solution 5 drops of fresh normal sodium sulfide solution and acidify with 0.5 cc. of glacial acetic acid: no more darkening of the solution is produced than in that of a control to which 0.01 mg. of lead as lead nitrate has been added (p. 730, U. S. P. XIII).

Render 10 cc. of the original solution slightly alkaline and pass hydrogen sulfide through it for ten minutes: no precipitate appears.

Add 30 cc. of distilled water and 5 cc. of normal hydrochloric acid to 5 cc. of the original solution: the solution shows no more sulfate than corresponds to 0.2 cc. of fiftieth-normal sulfuric acid, when treated by the U. S. P. test (p. 729, U. S. P. XIII).

Dissolve 0.5 Gm. of para-aminohippuric acid in a mixture of 5 cc. of nitric acid and 15 cc. of distilled water: the solution shows no more chloride than corresponds to 0.1 cc. of fiftieth-normal hydrochloric acid when treated by the U. S. P. test (p. 729, U. S. P. XIII).

Dry 0.25 Gm. of para-aminohippuric acid, accurately weighed, at 110 C. for two hours: the loss in weight does not exceed 0.25 per cent.

Ash about 0.25 Gm. of para-aminohippuric acid, accurately weighed: the amount of residue is not more than 0.05 per cent.

Weigh accurately about 2.5 Gm. of para-aminohippuric acid. Dilute to volume in a 250 cc. volumetric flask. Transfer 50 cc. of the solution to a 250 cc. beaker; add about 20 Gm. of ice and 5 cc. concentrated hydrochloric acid and allow to stand for about three minutes. Titrate the cooled solution with tenth-molar sodium nitrite solution previously standardized against sulfanilic acid, using an outside indicator of starch-iodide paste. Each 1 cc. of tenth-molar sodium nitrite is equivalent to 0.0194 Gm. of para-aminohippuric acid: the para-aminohippuric acid content is not less than 98 per cent and not more than 102 per cent.

STERILE SOLUTION OF PARA-AMINOHIPPURIC ACID SODIUM SALT: The para-aminohippuric acid sodium salt solution is prepared by using equimolecular amounts of para-aminohippuric acid and sodium hydroxide in pyrogen-free distilled water. The p_H is adjusted with citric acid, the solution made to volume, and the ampuls filled under nitrogen and sterilized by autoclave.

The p_H of the ampul solution is not less than 7 or more than 7.6.

Dilute 10 cc. of the solution to volume in a 200 cc. volumetric flask. Transfer 50 cc. of the diluted solution to a 250 cc. beaker; add about 20 Gm. of ice, 5 cc. of concentrated hydrochloric acid and allow to stand for about 3 minutes. Titrate the cooled solution with tenth-molar sodium nitrite solution previously standardized against sulfanilic acid, using an outside indicator of starch-iodide paste. Each 1 cc. of tenth-molar sodium nitrite is equivalent to 0.0194 Gm. of para-aminohippuric acid: the para-aminohippuric acid content is not less than 98 per cent or more than 102 per cent.

SHARP & DOHME, INC., GLENOLDEN, PA.

Sterile Solution of Sodium para-Aminohippurate: 50 cc. ampuls. Each 50 cc. contains 10 Gm. of sodium para-aminohippurate, buffered to p_H 7.0 with citric acid.

Para-Aminohippuric Acid (Reagent): 2 Gm. vials. For use in the preparation of standard solutions.

PENICILLIN (See New and Nonofficial Remedies, 1947, p. 144).

The following dosage forms have been accepted:

COMMERCIAL SOLVENTS CORPORATION, TERRE HAUTE, IND.

Tablets Crystalline Penicillin G Potassium: 100,000 units buffered with glycerides and sodium salts of fatty acids.

PREMO PHARMACEUTICAL LABORATORIES, INC., NEW YORK

Tablets Penicillin Calcium: 50,000 units and 100,000 units with calcium carbonate 0.25 Gm. as a buffer.

Troches Penicillin Calcium: 5,000 units.

CHAS. PFIZER & CO., INC., BROOKLYN

Crystalline Penicillin G Potassium: Bottles containing 100,000, 200,000 and 500,000 units and in bulk in bottles containing approximately one billion units.

NICOTINAMIDE (See New and Nonofficial Remedies, 1947, p. 514).

The following dosage forms have been accepted:

COLE CHEMICAL COMPANY, ST. LOUIS

Tablets Niacinamide: 100 mg.

BREWER & CO., INC., WORCESTER, MASS.

Solution Niacinamide, 100 mg. per cc.: 10 cc. vials. Preserved with 0.5 per cent chlorobutanol.

U. S. VITAMIN CORPORATION, NEW YORK

Solution Niacinamide, 50 mg. per cc.: 2 cc. ampuls.

AMINOPHYLLINE (See New and Nonofficial Remedies, 1947, p. 305).

The following dosage forms have been accepted:

BREWER & CO., INC., WORCESTER, MASS.

Solution Aminophylline: Ampuls 24 mg. in 10 cc.

Solution Aminophylline with Benzyl Alcohol 2%: Ampuls 48 mg. in 2 cc.

THIAMINE HYDROCHLORIDE (See New and Nonofficial Remedies, 1947, p. 506).

The following dosage forms have been accepted:

U. S. VITAMIN CORPORATION, NEW YORK

Tablets Thiamine Hydrochloride: 1 mg., 3 mg., 5 mg. and 10 mg.

Solution Thiamine Hydrochloride, 10 mg. per cc.: 1 cc. ampuls and 5 cc. and 10 cc. vials. Preserved with 0.5 per cent chlorobutanol.

Solution Thiamine Hydrochloride, 50 mg. per cc.: 10 cc. vials preserved with 0.5 per cent chlorobutanol.

Council on Physical Medicine

REPORT OF THE COUNCIL

The Council on Physical Medicine has authorized publication of the following reports. HOWARD A. CARTER, *Secretary.*

COLLENS SPHYGMO-OSCILLOMETER ACCEPTABLE

Manufacturer: U. M. A., Inc., 56 Cooper Square, New York 3.

The Collens Sphygmo-Oscillometer is essentially a sphygmomanometer equipped with an aneroid manometer sensitive enough not only to permit readings of systolic and diastolic blood pressure by the oscillatory method but also to permit conclusions as to the patency of peripheral arteries. It does the latter by measuring the amplitude of the arterial pulsations at different

Collens Sphygmo-Oscillometer.

cross sections of the upper and lower extremities. The instrument is enclosed in a sturdy metal compartment, which also has a space into which the necessary cuff, rubber tubing and inflating bulb can be tucked. The instrument as a whole is light and portable.

The instrument was examined in a clinic acceptable to the Council on Physical Medicine. It was considered satisfactory for diagnostic use. The directions seem to be well written and include a statement of the disease conditions in which the oscillometer may be expected to give information of diagnostic value.

The Council on Physical Medicine voted to include the Collens Sphygmo-Oscillometer in its list of accepted devices.

UNDERWOOD MANUFLEX ACCEPTABLE

Manufacturer: Underwood Manuflex Company, 2315 S. W. First Avenue, Portland, Ore.

The Underwood Manuflex is used for manipulating and stretching the joints of the fingers and the wrist.

The device consists of a base to which are attached four freely moving grooved molds. They are so shaped and connected that the base corresponds roughly to the palm of the hand, and the four molds fall into the position of the four fingers from the index to the smallest. Placing the molds in different positions by means of spaced pegs, many variations of movement and stretching of the fingers and wrist can be obtained.

A specimen of the device was examined in a clinic acceptable to the Council on Physical Medicine. The device was used in a wide variety of hand conditions, such as on hands involved by rheumatic arthritis, spastic paralysis, scars following burns, contractures following trauma and infection. When used under supervision of an occupational or physical therapist it was found to be of value in stretching the joints of the fingers, in correcting certain deformities of the fingers and wrist and in assisting in strengthening the intrinsic muscles of the hand. It can be used in a department for occupational therapy or for physical therapy.

Underwood Manuflex.

The folder issued by the company deals mainly with the possibilities of the device for musicians and athletes (e. g. basketball players). The only medical claims made are in a conservatively worded paragraph: "Effective in the treatment and relief of hand conditions resulting from wounds or disease which benefit by exercises for increased circulation and flexibility. Scar tissue, adhesions and swollen joints often come under this category." The fact that it is intended mainly for nonmedical groups is very evident. The promoter is cautioned that the acceptance of the Manuflex by the Council does not carry with it permission to exploit this fact in advertising to nonmedical groups such as musicians and athletes.

The Council on Physical Medicine voted to include the Underwood Manuflex in its list of accepted devices.

BURDICK CRYSTAL CONTROLLED DIATHERMY ACCEPTABLE

Manufacturer: The Burdick Corporation, Milton, Wis.

The Burdick Crystal Controlled Diathermy, Model X 85, is an apparatus mounted on four casters, equipped with both cable and drum for administration of diathermy to patients and designed to deliver a frequency of 13.66 megacycles per second. The frequency control devices with the unit are actuated by a piezoelectric quartz crystal and are stated to "maintain the frequency within a band width of plus or minus 0.05 per cent of 13.66 megacycles, regardless of how the controls are operated or applications to patient are made." It is also stated that "harmonic and spurious radiations are suppressed to a point well below the allowable limit of 25 microvolts per meter at a distance of 1,000 feet (304.8 meters)."

The firm assumes responsibility for noninterference with radio in case complaints are made. The Federal Communications Commission has awarded "type approval" no. D-471, and a copy of this type approval is on file in the office of the Secretary. Furthermore, the apparatus has been inspected by the Underwriters' Laboratories, Inc., and the device has been accepted for listing.

Model X 85.

The Model X 85 has a voltage tap switch with six positions for operation within tolerable limits of filament and plate voltage on line voltage from 105 to 125 volts. For maximum input of 350 milliamperes of plate current, with a line voltage of 117 volts and voltage tap switch on position four, the line input measures 9.50 amperes and 1,100 watts. The size of the cabinet is 36 cm. by 48 cm. by 54 cm. (14 by 19 by 21 inches). The unit weighs 150 kilograms (330 pounds).

The power output for the appliance in question has been measured in various ways by Council investigators using both the drum and the cable applicators, and the apparatus has been tested clinically. The apparatus conformed to all the requirements as set forth in the Council-adopted article, "Minimum Requirements for Acceptance of Diathermy Apparatus."

The Council on Physical Medicine voted to include the Burdick Crystal Controlled Diathermy, Model X 85, in its list of accepted devices.

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SATURDAY, NOVEMBER 1, 1947

THE TREATMENT OF HYPERTENSION

For the past two years patients from many parts of the United States have sought relief from hypertension in North Carolina, where they followed the so-called rice diet. Some have returned with unaltered blood pressure and an intense aversion to dietary management, but many others have returned to their homes with reduced blood pressure, improved vision, smaller cardiac silhouettes and a determination to remain on a diet low in protein and salt. Adequate scientific evidence is not available to prove that a diet based on rice is superior to one including wheat, barley, oats or buckwheat. For years results have been claimed for a low-salt diet, but evidence is lacking that protein restriction is valuable in hypertension. A diet especially low in salt is not acceptable to most hypertensive patients or to those with disease of the heart. A pilgrimage with fellow sufferers in all stages of treatment and faith in new methods have been effective for thousands of years. Psychosomatic medicine may explain much of the benefit accredited to spas, institutes, remote clinics and ocean voyages.

A study recently reported from the University of Michigan [1] confirms older work on the use of a low salt regimen for heart failure and hypertension.[2] A diet with 200 mg. of sodium and 70 Gm. of protein per day led to a fall of 20 mm. of mercury or more in the diastolic pressure of 58 per cent of ambulatory patients who stayed on the diet for weeks or months. The best results reported for splanchnicectomy showed a similar fall in 61 per cent of the cases. Physicians should test the value of sodium depletion, without protein restriction, in any hypertensive patient whose disabilities seem to warrant splanchnic section.

Splanchnic section has an operative mortality and a considerable postoperative morbidity. Postural hypotension may be more disabling than the preoperative symptoms. Sodium depletion also has a morbidity and even a mortality. Weakness, nausea and muscle cramps may ensue before a satisfactory fall in pressure has occurred. In cases with severe retinal and renal vascular disease uremia may be precipitated [3]; it may occur even though the rice diet, with its low protein content, is used.

Persons who have been on the usual American diet, which contains 5 to 8 Gm. of sodium (12 to 20 Gm. of salt) must follow the low salt regimen for weeks before its effect on blood pressure can be evaluated. The daily intake of sodium must be under 200 mg., for persons who do not sweat freely lose only 300 to 500 mg. of sodium per day from their bodies when salt intake is reduced. For this reason results are disappointing when "low salt" diets with a 400 to 800 mg. sodium content are prescribed. Since patients with severe vascular disease or chronic nephritis may lose 600 to 800 mg. of sodium in the urine alone as against 40 mg. lost by others with hypertension, a state similar to Addison's disease occurs when the salt intake is reduced. Not only the patient's symptoms but the blood urea level must be followed carefully at the start of a regimen of sodium depletion for chronic hypertension with vascular damage.

Reaser and Burch,[4] using radioactive isotopes, have confirmed earlier evidence that mercurial diuretics greatly increase the urinary loss of sodium. The sodium diuresis precedes water diuresis by two to four hours, and sodium excretion per day may be increased sevenfold while water excretion is merely doubled. In persons with hypertension and in instances of heart failure with pulmonary congestion but without peripheral edema, mercurial diuretics may be helpful in hastening the loss of sodium or in permitting a somewhat more liberal diet. The raw foods in the diet contain 30 to 300 mg. of sodium per 100 calories, or about 1,500 mg. per day. Rice contains less than 8 mg. per 100 calories, other grains twice that amount. One dose of a mercurial diuretic may rob an edema-free patient of 4,000 mg. of sodium, and in edema the total loss in a week after one dose may be 15,000 mg. Thus, two injections of a mercury compound in a week can more than make up for the difference in salt obtained from a rice diet and from one with a wider choice of unsalted foods, or it may compensate for the sodium taken in by the patient who occasionally dines out.

In most cases hypertensive patients with normal blood urea levels can be safely tried on sodium depletion, using diet and mercurials for three weeks at least and pushing the therapy, as one does digitalis, until the desired result is effected or undesirable symptoms occur. If a fall in pressure does not result, dietary restriction is not likely to have any value for

1. Bryant, J. M., and Blecha, E.: Low Sodium: Forced Fluid Management of Hypertensive Vascular Disease and Hypertensive Heart Disease, Proc. Soc. Exper. Biol. & Med. **65**: 227 (June) 1947.

2. Dietary Treatment of Hypertensive Disease, editorial, J. A. M. A. **134**: 457 (May 31) 1947.

3. Thorn, G. W.; Koepf, G. F., and Clinton, M., Jr.: Renal Failure Simulating Adrenocortical Insufficiency, New England J. Med. **231**: 76-85 (July 20) 1944.

4. Reaser, P. B., and Burch, G.: Radiosodium Tracer Studies in Congestive Heart Failure, Proc. Soc. Exper. Biol. & Med. **63**: 543 (Dec.) 1946.

that patient; if the pressure falls a regimen must be worked out which will maintain the sodium depletion. Hot weather or febrile illness may make additional salt necessary. Renal impairment may make protein restriction imperative; then rice should be used as the main source of calories and protein, for Sure [5] has shown it to be 2.5 times as effective, per gram of protein, as is wheat in maintaining the growth of young animals. On no other regimen do patients come into nitrogen equilibrium at such a low protein intake. Fruit juices, rich in potassium, should not be given freely in uremia, but fluid up to 2 or even 3 liters per day may be used during salt restriction without fear of edema as a result.

Many patients have accepted the rice diet, and many more have accepted diets made more liberal by giving more protein and by the use of mercurials. During the war much work was done on desalting agents to aid sailors and soldiers on life rafts. More recent studies [6] have shown that it may be possible to prepare potable emulsions of insoluble material which will take up sodium as it passes through the digestive tract. With our present diets and diuretics, the physician can determine the effectiveness of sodium depletion on the symptoms and arterial pressure of any patient. This determination may well precede any recommendation for travel or surgery.

SEVEN DAY CURE FOR CHRONIC ALCOHOLISM

Since the publication of an article, "Seven Day Cure for Alcoholism," in *Magazine Digest*,[1] THE JOURNAL has been receiving inquiries from both physicians and the public requesting further information and confirmation of the efficacy of the treatment proposed. A similar article derived from the same source was published in late 1939 when there was also a deluge of requests for information. At that time THE JOURNAL considered the value of giving alcohol to alcoholics, especially in acute exacerbations of chronic alcoholism; small doses of alcohol were thought to be useful in the prevention of onset of acute alcoholic manias or, if delirium tremens was already present, in treatment. Such medication was to be given by whatever method of administration appeared simplest; by mouth, intravenously or otherwise. Furthermore, results appeared to be equal in all methods of administration. A review of the new report and other available literature on this subject does not provide reason for change of attitude.

The treatment described is a withdrawal method, using slowly decreasing doses of alcohol intravenously over a period of six to seven days. The patients treated by the authors were those with acute alcoholic dementia, hallucinosis and delirium tremens. These patients were treated equally as successfully by the intravenous method as others have been who took decreasing doses by mouth along with other adjuvant treatment, but no more so. There was some discussion of a reduced alkaline reserve in the acute cases which returned slowly to normal with intravenous treatment. The same phenomenon occurs with treatment by other accepted methods; hence, it is nonspecific as far as intravenous administration is concerned. Finally, the authors admit that this method does not produce a permanent cure of chronic alcoholism. The patients may well return to the abuse of alcohol, as they frequently do following other types of withdrawal treatment. The personality factors that cause maladjustment to environment must be determined and controlled.

A simple cure for chronic alcoholism, seven day, seven week or even seven year, does not exist. A miracle cure has not been developed, and little likelihood exists that there will be one. Nevertheless, research in alcoholism should be intensified to advance knowledge of treatment of the disease.

Perhaps one of the most interesting recent developments in the study of the etiology of the disease is the hypothesis discussed by Williams.[2] He suggests that an important factor in chronic alcoholism may be the possession, by the few who succumb among the many exposed, of a metabolic individuality which predisposes toward addiction. This is based on the considerable physiologic variability known to exist among persons not only in the effect that alcohol has on them but in their response to other drugs, as morphine, cocaine and barbiturates. For instance, only a few patients among the many treated with opiates over a long period of time eventually acquire drug addiction after the primary condition necessitating treatment with the drug has cleared. He suggests further that research should determine the particular form of metabolic individuality in patients in whom chronic alcoholism develops. This hypothesis does not negate the influence of heredity and environment but indicates only that an additional factor may be of importance.

The alcoholic world has been stirred many times during the past twenty-five to thirty years with reports of new cures for addiction. Beginning with the "noble experiment," prohibition, they range from McNally's "Mickey Finn Powders" and "Mrs. Moffatt's Shoofly Powders" through drug treatment with strychnine and curare, emetine and apomorphine conditioned reflex therapy, electric shock, insulin shock, hypnosis, treatment with amphetamine sulfate ("benzedrine sulfate," N. N. R.) and now, finally, treatment of alcoholism

5. Sure, B.: Relative Efficiency of the Proteins in Polished Rice and in Enriched Wheat Flour, Proc. Soc. Exper. Biol. & Med. **61**: 342 (April) 1946.

6. Dock, W.: Sodium Depletion as a Therapeutic Procedure: The Value of Ion-Exchange Resins in Withdrawing Sodium from the Body, Tr. A. Am. Physicians **59**: 283, 1946.

1. Bruel, L., and LeCoq, R.: Seven-Day Cure for Alcoholism, Magazine Digest, October 1947, page 22.

2. Williams, R. J.: The Etiology of Alcoholism: A Working Hypothesis Involving the Interplay of Hereditary and Environmental Factors, Quart. J. Stud. on Alcohol **7**: 567-587 (March) 1947.

with alcohol. Aside from its usefulness in withdrawal treatment, the technic seems about as illogical as the sugar treatment of diabetes or the morphine treatment of the opium habit.

With regard to a possible desensitizing action of alcohol given intravenously, little is known. Ethyl alcohol has never been considered to be antigenic, although some of its contaminants may be. In other countries scientists have studied the effects of injecting beer and wine under the skin of patients with chronic alcoholism. They reported that immunity did not develop and that untoward symptoms were absent after the pain subsided.

Estimates indicate that seven to ten years of heavy drinking are necessary to establish confirmed chronic alcoholism. At least an equal period of successful abstinence under medical observation is required before permanent cure can be claimed. Other aids to treatment will almost surely be developed. Slow or rapid withdrawal of patients from alcoholic beverages, adjuvant medical treatment and psychotherapy for the underlying personality disorder constitute present day approved therapy. "Alcoholics Anonymous" have invoked the additional factors of spiritual inspiration and mass psychology.

Current Comment

YOUR DIRECTORY INFORMATION CARD

Preparations are now being made to publish the new eighteenth edition of the "American Medical Directory." The last previous edition of the Directory was issued late in 1942; wartime restrictions and the shortage of paper and labor have prevented any intervening issues. About November 15, a directory card will be mailed to every physician in the United States, its dependencies and Canada, requesting information to be used in compiling the new Directory. Physicians who receive an information card should fill it out and return it promptly whether or not any change has occurred in any of the points on which information is requested. Physicians should also fill out the right half of the card, which information will be used exclusively for statistical purposes. Even if you have sent in similar information recently, mail the card promptly to insure the accurate listing of name and address. There is no charge for publishing the data, nor are physicians obligated in any way. The Directory is one of the most important contributions of the American Medical Association to the work of the medical profession in the United States. In it, as in no other published directory, may be found dependable data concerning physicians, hospitals, medical organizations and activities. Full information on medical schools, specialization in the fields of medical practice, memberships in special medical societies, tabulation of medical journals and libraries and, indeed, practically every important fact concerning the medical profession in which any one might possibly be interested is also included. If you fail to receive one of these Directory Information cards by December 1, write at once to the Directory Department requesting that a duplicate card be mailed.

LEUKERGY, THE CLUMPING OF WHITE CELLS IN INFLAMMATION

American scientific missions to Europe have returned with a few reports of effective research work in the occupied and devastated countries. The medical mission to Poland for the United Nations Relief and Rehabilitation Administration, for example, returned with a series of contributions from Polish medical scientists. Some of these have recently been published. Among them is a report by L. Fleck and Z. Murczynska on the clumping of white blood cells in cytologically homogeneous groups in inflammation.[1] This condition is called "leukergy." It was found that leukergy increases in infectious diseases. The phenomenon appears to be associated with the agglutination of platelets. Ordinarily the process is slow, taking three to five hours, and involves only a small portion of white cells. In such infectious diseases as typhus, pneumonia or sepsis the process is intensified, and practically all the leukocytes are clumped in groups of 8 to 20 cells within ten to twenty minutes. This increased leukergy persists during the stage of convalescence. The clumping of lymphocytes becomes more definite with decrease of temperature, whereas neutrophils clump more readily in fever. The authors suggest that serologic factors may be involved. A study of these factors may lead to further understanding of the inflammatory process.

LOCAL HEALTH UNITS

Under the auspices of the American Public Health Association a conference to consider effective ways of improving local health services was attended recently by delegates of sixty-five organizations, including the American Medical Association. The role of the local health department, the state health department and voluntary citizen organizations were discussed. Throughout the conference the six basic functions of a local health department that were set forth in the report by Emerson and Luginbuhl [1] were emphasized. What each organization can provide for the community must be determined by careful study. One plan cannot be applied nationally with the hope that it will be equally effective for all communities. County and state medical societies should take active parts in all planning. The House of Delegates of the American Medical Association has expressed its approval of plans to cover the population by local units of health jurisdiction. The members of the medical profession must participate and lend sufficient aid to achieve complete local health protection in cooperation, not competition, with medical practice.

1. Fleck, L., and Murczynska, Z.: Leukergy: Clumping of White Blood Cells in Cytologically Homogeneous Groups: A New Phenomenon of Inflammation, Texas Rep. Biol. & Med. 5: 156-167, 1947.

1. Emerson, H., and Luginbuhl, M.: One Thousand Two Hundred Local Public Health Departments for the United States, Am. J. Pub. Health 35: 898-904 (Sept.) 1945.

ORGANIZATION SECTION

Washington Letter

(From a Special Correspondent)

Oct. 30, 1947.

Dr. Hawley Reports Increase in Alcoholism Among Veterans

Dr. Paul R. Hawley, medical director, Veterans Administration, stated in a speech before the Southern Governor's Conference at Asheville, N. C., that chronic alcoholism is increasing among veterans "by leaps and bounds." He said that in two thirds of 10,000 patients expected to require treatment this year for alcoholism the condition involved pure uncomplicated alcoholism and had nothing to do with mental illness. The agency also announced that it plans a special research project on fertility problems of the 1,600 paraplegics of World War II. Rejected was a proposal for setting up an artificial insemination clinic for married veterans who had suffered loss of natural sexual function. Dr. Hawley announced the transfer of Dr. Robert C. Cook, deputy medical director since January 1946, to the managership of the Veterans Hospital at Fort Logan, Colo.

Science, Research and Public Policy

The fourth report of a five volume series, "Science and Public Policy," issued by the President's assistant, John R. Steelman, as head of the President's Scientific Research Board, stresses that the shortage of scientific personnel is dangerous to national welfare and security. It is attributed to heavy postwar demand for scientists and severely reduced wartime training of potential scientists. Mr. Steelman said it is "of the utmost urgency that steps be taken to increase and improve our scientific manpool."

In the last of his five reports to President Truman Mr. Steelman declared that national expenditures for research, including government expenditures for this purpose, should eventually be tripled. The report was titled "The Nation's Medical Research," and it warned that there is a critical shortage of research workers in medicine and allied subjects. The report pointed out that some of the most prevalent diseases are receiving little attention in federal medical research programs, among them heart disease, influenza, rheumatism, kidney disease, sinusitis and the common cold. The 118 page report recommended that the nation as a whole, government, industry, universities and other private groups, triple outlays for research as quickly as possible with an objective of spending $300,000,000 annually by 1957. Mr. Steelman declared that most of this expansion must come from public funds but that federal support for research should supplement and not replace other financing.

Increased Basic Scientific Research Need Stressed

W. W. Waymack, one of the five members of the U. S. Atomic Energy Commission, told a Unitarian Association audience here that the present wave of nationalism may cut the United States off from foreign discoveries in basic science on which it has long depended. He said that it is vital for America to strengthen herself in basic scientific research. "We have a nucleus of unquestioned genius in basic research. But up to now the American superiority has been in applied science, not in what is called basic or pure scientific research—the search for new fundamental knowledge about the nature of things, regardless of whether anybody can see an immediate practical application or not. Yet, it is in that field that the great advances are made. Let's be blunt about it—there is today no assurance that basic science is going to be as freely international as it used to be. There is danger, if the world situation deteriorates, that a wave of alarmed nationalism will for the first time engulf science, too."

Health Service Studying Russian Treatment for Cancer

The National Cancer Institute of the U. S. Public Health Service is reported to have obtained an original manuscript describing in detail the Russian "KR" treatment for cancer and to have procured from London the same strain of organism as that used by Klyueva and Roskin in their reported successful treatment. Institute research workers are endeavoring to check the claims made by Nina Klyueva and Gregori Roskin in their treatment of cancer.

Medical Supplies Stocked by War Department

The War Department revealed that among its vast stockpile of strategic materials being accumulated in the event of an international emergency are medical supplies. The stockpiling plan, part of an industrial preparedness program, will cost $2,100,000,000 over a five or six year period.

Sells Entire Sulfonamide Stock

The War Assets Administration announced here that it was offering its entire $2,500,000 stock of sulfonamide drugs in an "inventory clearance" sale beginning October 27.

Limb Manufacturers

Delegates to the thirtieth annual convention of the Orthopedic Appliance and Limb Manufacturers' Association were so pleased with their deliberation here that members decided to hold their 1948 convention in the capital of the United States.

Coming Medical Meetings

Conference of State Medical Society Secretaries and Editors, Chicago, A.M.A. Headquarters, Nov. 7-8. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Allergy, St. Louis, Hotel Jefferson, Dec. 15-17. Dr. Theodore L. Squier, 425 E. Wisconsin Ave., Milwaukee 2, Secretary.

American Academy of Dermatology and Syphilology, Chicago, Palmer House, Dec. 7-11. Dr. Earl D. Osborne, 471 Delaware Ave., Buffalo, N. Y., Secretary.

American Academy of Pediatries, Dallas, Texas, Dec. 8-11. Dr. Clifford G. Grulee, 636 Church St., Evanston, Ill., Secretary.

American Association of Railway Surgeons, Chicago, Nov. 23-25. Dr. Raymond B. Kepner, 547 West Jackson Boulevard, Chicago 6, Secretary.

American Otorhinologic Society for the Advancement of Plastic and Reconstructive Surgery, New York, Nov. 13. Dr. Norman N. Smith, 291 Whitney Ave., New Haven 11, Conn., Secretary.

American Society for the Study of Arteriosclerosis, Chicago, Hotel Knickerbocker, Nov. 2-3. Dr. O. J. Pollak, Wilmington General Hospital, Wilmington 14, Delaware, Secretary.

American Society of Anesthesiologists, New York, Hotel New Yorker, Dec. 4-5. Dr. Curtiss B. Hickcox, 745 Fifth Ave., Room 1503, New York 22, Secretary.

American Society of Tropical Medicine, Atlanta, Ga., Dec. 2-4. Dr. Norman H. Topping, National Institute of Health, Bethesda 14, Md., Secretary.

Association of Military Surgeons of the United States, Boston, Hotel Statler, Nov. 13-15. Col. James M. Phalen, Army Medical Museum, Washington 25, D. C., Secretary.

New York State Association of Public Health Laboratories, Albany, Nov. 7. Miss M. B. Kirkbride, New Scotland Ave., Albany 1, Secretary.

Post Graduate Medical Assembly of South Texas, Houston, Texas, Coliseum, Dec. 1-3. Dr. E. Trowbridge Wolf, 229 Medical Arts Bldg., Houston, Texas, Secretary.

Puerto Rico, Medical Association of, San Juan, Dec. 10-14. Dr. Jeramfel Cordero, Box 3866, Santurce, Secretary.

Radiological Society of North America, Boston, Nov. 30-Dec. 5. Dr. Donald S. Childs, 607 Medical Arts Bldg., Syracuse 2, N. Y., Secretary.

Seaboard Medical Association of Virginia and North Carolina, Virginia Beach, Va., Dec. 2-5. Dr. Clarence Porter Jones, 3117 West Ave., Newport News, Va., Secretary.

Southern Medical Association, Baltimore, Nov. 24-27, Mr. C. P. Loranz, Empire Bldg., Birmingham 3, Ala., Secretary.

Southern Surgical Association, Hollywood, Fla., Dec. 9-11. Dr. Alfred Blalock, Johns Hopkins Hospital, Baltimore 5, Secretary.

Southwestern Medical Association, Phoenix, Ariz., Hotel Westward Ho, Nov. 6-8. Dr. Louis W. Breck, 116 Mills St., El Paso, Texas, Secretary.

Western Surgical Association, Colorado Springs, Broadmoor Hotel, Dec. 4-6. Dr. Warren H. Cole, 1853 West Polk St., Chicago 12, Secretary.

JOINT COMMITTEE FOR THE COORDINATION OF MEDICAL ACTIVITIES

Report of Meeting in Chicago, August 16

The Joint Committee for the Coordination of Medical Activities met in the Board Room of the American Medical Association Building in Chicago on Saturday, Aug. 16, 1947. The meeting was called to order by the Chairman, Dr. Ernest E. Irons, at 10 a. m. Members and liaison members present were:

Dr. Arthur W. Allen, Boston. (American College of Surgeons)
Dr. Donald G. Anderson, Chicago. (Secretary, A.M.A. Council on Medical Education and Hospitals)
Brig. Gen. George E. Armstrong, Washington, D. C. (Office of the Surgeon General, U. S. Army)
Dr. Walter L. Bierring, Des Moines, Iowa. (Federation of State Medical Boards)
Mr. George W. Cooley, Chicago. (A.M.A. Council on Medical Service)
Dr. W. Palmer Dearing, Washington, D. C. (U. S. Public Health Service)
Dr. Warren F. Draper, Washington, D. C. (American Medical Association and American Red Cross)
Capt. William E. Eaton, Washington, D. C. (American Medical Association and U. S. Navy)
Dr. Charles H. Evans, Warrenton, Ga. (American Pharmaceutical Association)
Dr. Robert P. Fischelis, Washington, D. C. (American Pharmaceutical Association)
Dr. Johnson F. Hammond, Chicago. (American Medical Association)
Dr. Elmer L. Henderson, Louisville, Ky. (American Medical Association)
Mr. Thomas A. Hendricks, Chicago. (A.M.A. Council on Medical Service)
Dr. Hugo F. Hullerman, Chicago. (American Hospital Association)
Dr. Ernest E. Irons, Chicago (American College of Physicians)
Dr. Victor Johnson, Rochester, Minn. (A.M.A. Council on Medical Education and Hospitals)
Dr. George F. Lull, Chicago. (American Medical Association)
Dr. J. J. Moore, Chicago. (American Medical Association)
Dr. H. B. Mulholland, Charlottesville, Va. (A.M.A. Committee on Rural Medical Service)
Dr. James E. Paullin, Atlanta, Ga. (American Medical Association)
Col. Paul I. Robinson, Washington, D. C. (Office of the Surgeon General, U. S. Army)
Rev. A. M. Schwitalla, S.J., St. Louis. (Catholic Hospital Association)
Dr. R. L. Sensenich, South Bend, Ind. (American Medical Association)
Dr. E. R. Serles, Chicago. (American Pharmaceutical Association)
Dr. H. H. Shoulders, Nashville, Tenn. (American Medical Association)
Mrs. M. V. Shuler, Chicago. (A.M.A. Bureau of Information)
Miss Mary Switzer, Washington, D. C. (Federal Security Agency)

CHANGES IN MEMBERSHIP

The Chairman announced the appointment of Dr. Walter L. Palmer, Chicago, as a member of the American College of Physicians Committee to take the place of Dr. LeRoy H. Sloan, resigned.

There was presented a communication addressed to the Chairman by Major Gen. R. W. Bliss, Surgeon General of the U. S. Army, in which it was stated that Lieut. Col. William N. Piper had been transferred from the Office of the Surgeon General and that Brig. Gen. George E. Armstrong, Deputy Surgeon General and Col. Paul I. Robinson, Chief of Personnel, had been appointed to represent the Office of the Surgeon General in the liaison membership of the Joint Committee.

The Chairman announced that the American Pharmaceutical Association had been invited to appoint representatives to liaison membership in the Joint Committee, and that Dr. E. R. Serles of Chicago, president, Dr. Charles H. Evans of Warrenton, Ga., chairman of the Professional Relations Committee, and Dr. Robert P. Fischelis, secretary of the American Pharmaceutical Association, had been appointed and were in attendance.

Father Schwitalla asked permission to bring an "understudy" to the next meeting in the person of Father John P. Flanagan, who has recently been appointed Executive Director of the Catholic Hospital Association. The Committee concurred in the expression of the Chairman that Father Flanagan would be more than welcome but sincerely hopes that Father Schwitalla will retain his own membership.

REPORT TO THE HOUSE OF DELEGATES

The Chairman presented the annual report of the Joint Committee for the Coordination of Medical Activities, which he had submitted to the House of Delegates of the American Medical Association at its annual session in June, and read the following adopted report of the reference committee to which it had been referred:

"The reference committee believes that the work of this Committee in acting as a liaison with all medical services is invaluable. It strongly urges that the Committee continue to function and recommends the adoption of the report.

The Joint Committee, on motion duly seconded and carried, approved the annual report as prepared by the Chairman. (This report was printed in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, June 21, p. 715.)

HOSPITAL RESIDENCIES AND GRADUATE EDUCATION

Dr. Donald G. Anderson, successor to Dr. Victor Johnson as Secretary of the Council on Medical Education and Hospitals, submitted the following statement on the present status of hospital residencies and graduate education:

During the past year the number of residencies and fellowships approved by the Council on Medical Education and Hospitals of the American Medical Association has increased from 8,930 to 12,003, a gain of 3,073. In 1941 there were only 5,256 approved residencies, so that the current figure represents an increase of 6,747 residencies, or 128 per cent over the peak prewar figure. There is no way of accurately determining how far this great expansion of training opportunities has gone toward meeting the demand for residencies. Very few unfilled residencies have been reported to the Council office; on the other hand, the number of physicians who are seeking information about open appointments has dwindled to a handful. It probably would be fair to estimate that most physicians seeking residency training have been able to secure satisfactory appointments, although at times only after some delay. Until there is clear evidence that the need for this type of training has been met fully, it would appear desirable to continue to strive to expand the residency program to the capacity of the hospitals and their personnel for giving effective training. A steady flow of applications for approval of newly created residencies is still coming in to the Council office, so that a further increase in the total number of residencies during the coming year definitely can be expected.

In the field of graduate education represented by graduate assemblies and postgraduate and continuation courses, 1,644 courses were offered during the past year. Of these, 239 were short review courses of five days' duration or less, 1,291 were courses of more than five days' duration and 14 were classified as clinical conferences or graduate assemblies. The steadily growing popularity of such courses can be judged from the fact that in two years the annual attendance has increased from 18,000 to 59,000. At the moment there is no evidence of any slackening of interest in providing such training since more than 800 courses already have been listed for the period July 1 to Dec. 30, 1947.

Following is a résumé of the discussion on Dr. Anderson's presentation:

The trend in the increase of hospital residencies is general throughout the country and not confined particularly to the larger communities. The Council on Medical Education and Hospitals has no definite information as to any tendency on the part of residents to drift from place to place because of dissatisfaction. In almost every field the present available residencies are such as to qualify the men for certification by specialty boards; after the Council passes on a residency, it is submitted to the specialty board concerned for approval, and the Council does not give final approval or list a hospital as approved for residencies in specialties unless it is also approved by the specialty boards; a few of the boards do not cooperate with the Council in this connection.

When a man takes a residency in a hospital approved by the Council on Medical Education and Hospitals, nothing is said in his appointment as to whether the residency is for one, two or three years, and in those cases in which a board requires a three year residency it is up to the candidate to obtain those three years wherever he can. It is not required that a three year residency be continuous in the same institution. Some

hospitals consider themselves capable of providing only one year residency training and say that if they cannot get residents unless they provide three year residencies, they may be obliged to consider dropping their residencies altogether. However, although the student is prone to throw the burden on the hospital, it would appear that if he has one year at one hospital, one at another and so on, the specialty boards would be satisfied. Such migratory residencies may not be the best thing for the person in that by serving as resident in perhaps three different hospitals, he might merely be repeating his work each year and thus gain little growth. One of the best examples of a residency of limited duration is in orthopedic surgery in a children's hospital; a man seeking certification in orthopedic surgery would not want to spend his whole time in a children's hospital; it is that sort of limitation which is involved in many institutions where only one year of residency is allowed.

Father Schwitalla asked for opinions as to the necessity for agreement between universities and specialty boards and also asked if there has been any coordinate attempt to harmonize efforts of universities with board requirements. He thought there probably is room for interchange of opinion and perhaps, some time in the future, conferences might be desirable between schools—graduate schools and universities that are recognized as clinical schools—and the specialty boards. Dr. Johnson thought that if a hospital had a program leading to a master's degree, such conferences probably would be acceptable. As an illustration of what he had in mind that should be clarified, Father Schwitalla presented the following example: A man has spent one or two years in an approved residency in a nonuniversity hospital; in another hospital, perhaps in the same community, members of the university faculty are doing the teaching and the resident wants to transfer to the university program. However, if he does so, he is not allowed full credit for the year, or two years, in the first hospital because the university refuses to recognize the control of the residency in that hospital; the same thing sometimes applies when a man transfers from one university hospital to another; the men concerned are mostly those who already have an M.D. degree and are working toward an M.A. or Ph.D. degree.

It was Dr. Johnson's opinion that the specialty boards would have no concern over that sort of situation, that it is entirely an academic matter and that the boards would not be even slightly concerned in cases in which a man is working for a degree other than the M.D. Dr. Irons agreed with Dr. Johnson and saw no need for the specialty boards to be concerned.

LICENSURE

Dr. Bierring offered the following report on the status of medical licensure with particular reference to licensure of graduates of foreign extramural schools:

Three of the extramural European schools with which the United States licensing boards have had reason to be concerned are located in Scotland. They have been in existence for a considerable number of years and have been, principally, clinical schools in which the faculty is comprised of members of the faculty of the University of Glasgow and the University of Edinburgh and, in a few instances, of St. Andrews University and also of Fellows of the Royal College of Surgeons and the Faculty of Medicine of Glasgow University. The teaching of anatomy and the basic sciences in these schools always has been below that of university training. While there has been no special inspection of these schools, a great deal of attention has been paid them, particularly by the Association of American Medical Colleges.

Since 1939 the tendency on the part of the American licensing boards has been not to accept for licensure graduates of these schools. However, since 1944 such graduates have been accepted for licensure in New York state and as a result they are now applying in other states for reciprocity. In some few instances, they have been accepted because the states concerned have reciprocity agreements with New York. The general tendency at the present time is to look more closely into the credentials of these graduates and not to admit them to licensure. An item in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for August 9 (p. 1254) stated that a newly appointed assistant director in the headquarters of the United Nations World Health Organization is a graduate of St. Andrews and has a degree of Doctor of Public Health. In Great Britain such graduates receive no degree; they are admitted to the Conjoint Examination Board of England and the Triple Qualification Board of Scotland, are placed on the Register to practice and are designated as Licentiate of the Royal College of Physicians and Member of the Royal College of Surgeons.

Another matter troubling licensing bodies at present is the tendency toward development of more state boards of examiners in the basic sciences. There are now nineteen such boards in eighteen states and the District of Columbia. One of the main purposes in the original establishment of these boards was to limit the licensure of improperly educated practitioners of the healing arts. Only six of the basic science boards accept the certificate of the National Board of Medical Examiners, and five of them have no reciprocal agreements with other boards. The problem with respect to medical licensure is that while the basic purpose of these boards was to determine a general knowledge of the basic sciences in order to qualify an applicant for admission to examination for licensure in the healing arts, gradually they have come to be agencies that actually determine medical licensure. A year ago a prominent physician said that the basic science examination was the "alpha of the omega of medical licensure." An osteopath or a chiropractor may be a member of a basic science board. There are three states in which a Doctor of Veterinary Medicine is a member; in five states an osteopath is a member and in four states a chiropractor is a member.

In response to a question from Miss Switzer, Dr. Bierring said that there have been graduates of the best medical schools who have failed to pass the basic science board examinations, largely because of the nonmedical examiners, and that another difficulty is in the methods of grading, which vary from subject passing grades of 70 to 75 per cent for a general average; a number of states require 75 per cent in each subject—the board in New Mexico requires 85 per cent passing grade and 75 per cent in each subject!

Dr. Johnson expressed the opinion that the basic science board constituted another barrier to the movement of physicians from one state to another and that the recent graduate does not have much trouble in the examinations but a graduate of twenty or thirty years ago is often in difficulty.

In reply to a question by Dr. Moore, Dr. Bierring stated that by action taken at a meeting of the Federation of State Medical Boards a year ago and confirmed again in February 1947 no medical graduates of foreign schools, except those of the university medical schools of Great Britain, would be considered for admission to examination for licensure unless they had taken an additional year of training in this country.

THE GENERAL PRACTITIONER

REPORT OF SUBCOMMITTEE ON SPECIALTY BOARD FOR GENERAL PRACTITIONERS

Dr. Sensenich, a member of the Subcommittee, presented the following:

The meeting of county medical society officers in Atlantic City at the time of the annual session of the American Medical Association, the so-called Grass Roots Conference, afforded a good perspective of the present situation in the general practice of medicine. To this meeting were invited the officers of the county medical societies, the organizations which are the backbone of the organized medical profession in this country. More than 300 physicians from widely distributed areas were in attendance. The desirability of a specialty board for general practitioners was discussed at some length, and it is doubtful that the movement to that end is gaining any particular strength. The Indiana Board of General Practice, the pioneer in the field, was established with excellent motives and outlines; it is still very young and it is not yet definite as to what its place in medicine is or as to what should be done to carry out its objectives. However, the position of the general practitioner with respect to his place in the hospital is acute. It does not appear from study and observation that the general practitioner himself is particularly interested in the establishment of a specialty board which will "certify" him. He is interested, however, in the position that he is a member of the only group in the whole medical profession that is not organized for itself and he feels himself to be on the defensive and unable to protect himself. This feeling will stimulate some kind of united effort on the part of general practitioners and may add to the tension that is evident in their hospital relationships. Out of all this a certifying board, or at least some machinery for recognizing superior work, might evolve, a board to improve the standards of the general practitioner and not too much involved in attempts to protect his selfish interest.

Some kind of general practitioners' organization is inevitable. It is not sure that that would improve the situation at all, but they are sufficiently distressed and unhappy to try almost anything. The danger lies in the fact that such an organization will be more concerned with protecting the group against what they believe to be inequities and disadvantages suffered only by their group.

SECTIONS ON GENERAL PRACTICE IN HOSPITALS

Dr. Anderson informed the Committee as follows regarding the activity of the Council on Medical Education and Hospitals with respect to the establishment of general practice sections in hospitals:

The Council on Medical Education and Hospitals has been active in advancing the development of general practice sections in hospitals. At the meeting of the House of Delegates of the American Medical Association in June, the Council presented a supplementary report which reviewed the policy of the Council, the Advisory Board for Medical Specialties and the House of Delegates with respect to the appointment of general practitioners to hospital staffs. This report was later published in THE JOURNAL, June 21, page 711.

In the report it was pointed out that any policy of limiting staff appointments to physicians certified by specialty boards or holding membership in certain special societies is contrary to the principles of the Council and of

the Advisory Board for Medical Specialties. The report went on to cite the action of the House of Delegates in 1946 when it passed a resolution encouraging hospitals to establish general practitioner sections. This resolution specifically stated that the creation of such services would not prevent hospitals from being approved for the training of interns or residents.

The Council requested the authorization of the House of Delegates to amend the section of the Essentials of a Registered Hospital dealing with the establishment of staff sections so as to include specific mention of general practice sections. This amendment was approved by the House of Delegates.

Reprints of the supplementary report and copies of the revised Essentials of a Registered Hospital have been sent to every one of the Council's registered hospitals and to all the hospital associations. Also included were reprints of an article by Dr. M. H. Miller describing the operation of a general practice section in a large general hospital over a period of eight years.

In addition to these activities, the Council has been active in advising physicians and hospitals seeking information about the establishment of general practice sections in specific hospitals. In order that it may be prepared to render maximum assistance in this respect, the Council is trying to collect detailed information regarding the working arrangements in hospitals that have already established general practice sections. In conducting the annual census of registered hospitals this fall, the Council will secure information as to how many hospitals have established general practice sections. The data obtained in this way should be helpful in determining how much progress is being made in securing the place of the general practiitoner in the hospitals of this country.

During the discussion and in reply to various questions, Dr. Anderson stated that a general practice section is simply the part of the hospital where the general practitioner enjoys staff membership and has the privilege of bringing his patients. It is more an administrative than a physical set-up. The Council on Medical Education and Hospitals has discussed but has not succeeded in finding a satisfactory definition of a general practice section or of general practice itself. For the present, at least, it would seem wise to hold to general principles such as that the general practitioner should be allowed to do whatever he is qualified to do. As far as a patient is concerned, a general practice section in a hospital means that if he is being taken care of by a general practitioner, that practitioner can continue to take care of him in the hospital.

Dr. Bierring asked if it should not be the purpose of the Council to develop a standard that the general practice section is the part of the hospital which should be the principal service in the hospital from which reference to special services should be made, and Dr. Anderson thought the Council certainly should encourage such a development.

Dr. Sensenich suggested that it might be advantageous if, for certification, the specialty boards would require a certain amount of general service either inside or outside a hospital on some basis that would carry out Dr. Bierring's idea. Father Schwitalla asked whether Dr. Bierring implied that the functions of the general practitioner and the diagnostician are identical, and Dr. Bierring stated that to be his opinion. Father Schwitalla said that the direction the general practice development is taking in some hospitals is not exactly the direction pointed out by Dr. Bierring, but that perhaps the whole tension could be relieved if Dr. Bierring's plan could be maintained.

Dr. Bierring expressed the opinion that the general practitioner of the future is going to be able to recognize the conditions that require his services, that he is going to take care of 75 per cent of all illnesses and that the young man now coming up, with two years of rotating internship and possibly two years of residency training in general practice, is going to be the family physician of the future.

REPORT ON ACTION OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION

Dr. Shoulders presented a statement as follows:

During my two years as President-Elect and President of the American Medical Association, I was the recipient of many complaints that the medical profession was not giving the best service to the people. One criticism which I heard many times was that the medical student during his education is entirely under the influence of specialists, that his training is all to the end that he may be qualified to take a specialty board examination. It seemed to me that a committee of the American Medical Association might be appointed which would be widely representative of the profession and which might conduct a study and present a report that could be very helpful. My entire thought in making a recommendation to that effect to the House of Delegates was that by this means it might be discovered whether or not the complaints have any justification in fact. The proposed committee could: (1) define the term "general practitioner," or "general physician," on a functional basis; (2) determine whether or not there is need for a large increase in the number of medical graduates and, if so, its extent; (3) study the present program of medical education and training, both undergraduate and postgraduate, to determine whether or not the content and administration of the program is properly adjusted to the present day needs of the people; (4) study the possibility and feasibility of utilizing smaller community hospitals in a program for the training of general practitioners and the possibility of approving such institutions for such training when a teaching program is properly organized and administered; (5) study the means by which communities in need of additional services may be aided; (6) study such other questions as the committee itself may determine to be necessary in arriving at sound conclusions concerning the entire field of medicine, and (7) propose a long range program designed to overcome present insufficiencies and to meet future needs.

The House of Delegates approved my recommendation, and I understand from Dr. Irons that the committee will be appointed by the Board of Trustees at its September meeting.

Miss Switzer remarked that there are many efforts on the part of both public and private agencies in special fields—as, for instance, in the Federal Security Agency, the well financed projects in cancer research and mental hygiene—which seek to encourage medical schools to give emphasis in their curriculums to special subjects, and that this prodding for orientation of medical education on the special side should be taken seriously into consideration in any study that is pointed to improve the education of a medical student who may become a general practitioner; if the funds available for special projects could be used to improve education for general practice, the natural result would be to bring eventual improvement in the practice of specialties.

Dr. Lull discussed the economic side of the matter, saying that a man who is certified as a specialist is supposed to limit his practice to that specialty and eventually he is going to find that he cannot make a good living because the country can absorb only so many specialists.

Dr. Johnson spoke in behalf of the specialty boards: It is clear that no one knows how to meet the situation, but making the American boards the whipping post ought to be avoided. The boards have done a fine job. On several occasions the whole blame for the present situation has been laid at the door of the boards; that is loose thinking and entirely unwarranted.

AMERICAN ACADEMY OF GENERAL PRACTICE

Dr. Bierring presented a report which he had prepared, after some investigation, on the newly organized American Academy of General Practice.

After discussion, the Joint Committee adopted a motion that Dr. Bierring inform Dr. Davis, president of the Academy, that the House of Delegates of the American Medical Association has authorized the appointment by the Board of Trustees of a committee to study the problems of the general practitioner and of general practice, and that this Joint Committee will be glad to recommend that the conclusions of the new committee be transmitted at the proper time to Dr. Davis.

REPORT OF SUBCOMMITTEE ON LEGISLATION FOR A NATIONAL DEPARTMENT OF HEALTH

Miss Switzer reported for the Subcommittee on Legislation for a National Department of Health as follows:

The original Taft Bill, S. 140, was somewhat amended to eliminate the professional qualifications required of the three undersecretaries, to create the three divisions—health, education and security—and to charge each of the three undersecretaries with special responsibility for each division. The Bill was reported out of committee but did not come to a vote in the Senate. It probably will come to a vote early in the next session of Congress. Then, of course, it has to go to the House.

The relation of S. 140 to H. R. 545 would be very important if the latter should retain its provision for the establishment of an independent health agency. If S. 140 is enacted into law, it is probable that the health agency provisions of H. R. 545 will be eliminated.

The chances of a purely professional person being in charge of the proposed Division of Health would be about 50-50, depending on the personal preference of the President making the appointment. If the present programs remain more or less as they are, the present situation probably will not be changed much, but if there should be an elaborate medical care program, it is reasonable to expect some changes.

The Chairman thanked Miss Switzer for her report and stated that the subcommittee would be continued to report when there are further developments.

Permission was requested by the Chairman, and was granted, for the continuation of the subcommittees which reported at this meeting so that further progress reports on hospital residencies, licensure, general practice and so on can be heard at the next meeting.

HOSPITAL SURVEY AND CONSTRUCTION PROGRAM

The Chairman asked Miss Switzer to inform the Joint Committee regarding the progress of activity authorized under the Hill-Burton Hospital Survey and Construction Act, which she did as follows:

Shortly after the last meeting of this Joint Committee, followed by a meeting of the Federal Hospital Council in Washington, D. C., Mr. Graham Davis of the American Hospital Association, a member of the Joint Committee, discussed with me his concern that in the state advisory councils provided for under the Hospital Survey and Construction Act there is not enough leadership taken by the state medical societies. I have found that more has been done than perhaps Dr. Davis or I realized. I think Dr. Davis felt that some direct recommendation to state and county medical societies as to what they might do in connection with the advisory councils would be helpful. Perhaps something could be printed in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION to call special attention to the necessity for greater activity on the part of the state associations.

A pamphlet summarizing the law and regulations governing the Hospital Survey and Construction Program was distributed widely at Atlantic City, N. J., during the annual session of the American Medical Association in June. There has been good response to this pamphlet, and it is felt that considerable progress is being made. However, we still continue to need the very close cooperation of the state medical societies with the state advisory councils. Almost all the states have physicians on the advisory councils. It would be helpful, increasingly so as money becomes available and as state plans come up for discussion and approval, to remind the medical societies that they have an obligation and a stake in this program. There is no crisis, but there is need for a constant urging of attention. A good deal of public education is needed, not only of the patient public but also of the physician public. There are several things the U. S. Public Health Service is doing through the Federal Hospital Council, one of which is the establishment of an Office of Program Planning.

Dr. F. S. Crockett, chairman of the Committee on Rural Medical Service, is a member of a special rural subcommittee of the Federal Hospital Council and, to fill a vacancy, Dr. James E. Paullin, a member of this Joint Committee, is being asked to become a member of the Council.

Dr. Lull said he would include in his Secretary's Letter at an early date a statement such as that suggested by Miss Switzer and would recommend that the Council on Medical Service include a similar statement in its News Letter.

Dr. Sensenich said that one reason for slowness or lack of applications to participate in the program may be that some communities which have been accustomed to getting things done on their own without outside aid are far down on the priority list and thus have little or no interest; that obviously the areas which have first, second and third priorities are not organized, nor have they given much thought to the program, and that in such instances the state medical societies can be of considerable assistance. Miss Switzer agreed emphatically, saying that the state medical associations through their component county societies—community units most accustomed to working in an organized manner—could do a splendid job if they would. Dr. Mulholland stated that many areas which could get "A" priority do not have the finances to construct and maintain the facilities even with federal aid, and that some communities which have set aside money for the purpose still cannot do it because of present costs and are becoming discouraged. Miss Switzer agreed that costs probably were having a delaying effect on completion of the plans. Only a few state plans, she said, have been completed and approved.

STUDENT NURSE RECRUITMENT PROGRAM

The following communication from Mr. George Bugbee, executive director of the American Hospital Association, was read by the Chairman, who presumed that it contained the substance of what Mr. Graham Davis would have reported if he could have been present:

I thought you would like to be brought up to date on the progress of the 1947 Student Nurse Recruitment Program which, as you know, is being conducted by the American Hospital Association and the Advertising Council, Inc., in cooperation with national nursing organizations and the American Red Cross. The program also has the endorsement and active support of such national organizations, in addition to the American Medical Association, as the American Medical Association Woman's Auxiliary, the U. S. Chamber of Commerce, Rotary International, Kiwanis, the National Tuberculosis Association and the American Public Health Association, to name a few.

In addition to the initial contribution of $10,000 made by the American Hospital Association, the American Red Cross has also contributed $10,000 and more than $16,000 has been received as voluntary contributions from more than five hundred schools of nursing. These funds, for the most part, have been allocated to the Advertising Council for newspaper advertising mats, posters, car cards, billboard posters and other promotional material. A series of newsletters is being distributed, approximately weekly, to all schools of nursing and to local student nurse recruitment committees.

An important part of the national backdrop of publicity has been the allocation of seven weeks of national radio network time on behalf of the program. The Advertising Council Radio Division estimates that during the first fifteen weeks of 1947 more than 527,295,000 listener-impressions have resulted. During the month of July 45,000 window display posters, 70,000 street car and bus posters and 2,000 billboard posters have been distributed by the Advertising Council throughout the country. This, together with a week of national radio network time (which began Monday, July 28) climaxed the national publicity program for the campaign.

Preliminary surveys among the schools of nursing indicate that, in some areas, a marked degree of optimism prevails regarding the likelihood of obtaining desired fall class quotas. In other areas, however, the situation does not look too promising.

The 1947 Student Nurse Recruitment Committee, of which Dr. Arestad is a member, expressed the opinion at its recent meeting that an effort should be made to secure additional and more active support from the American Medical Association and particularly from its local medical societies. In the last analysis the success of the program rests primarily with the initiation and active development of local student nurse recruitment programs. One of the main objectives of the committee has been to stimulate and assist the further development of such programs. As you well know, the members of the medical profession have a vital interest in seeing that the need for student nurses is filled. The shortage of professional nurses affects the physician in two ways: (1) lack of graduate nurses in hospitals has forced hospitals to close beds which are greatly in demand by physicians for their patients, and (2) physicians have been unable to obtain the number of professionally trained nurses desired for employment in their offices.

Therefore, I would like to suggest that you consider the following as an important contribution the American Medical Association may make to 1947 Student Nurse Recruitment:

1. Through THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, continue to call the attention of your membership to the interest they have in assisting in obtaining the 45,000 student nurses needed this year.
2. Urge local medical society officers and members to fully investigate the situation locally, determine the various ways in which they may most effectively participate in local programs, and point out specific activities they may carry out which will directly aid the program. (These may take the form of distributing information and material to young women whom they believe are likely candidates for nursing school; active participation in recruitment programs; underwriting of scholarships for young women financially unable to pay for the costs of nursing education and who are otherwise qualified; conveying to the public whenever and wherever possible, the opportunities and advantages which a career in nursing offers.)

Dr. Hullerman, in attendance in place of Mr. Davis, spoke as follows:

The Student Nurse Recruitment Committee has recommended that this recruitment be continued in 1948 on somewhat the same pattern, from an organizational standpoint, as obtained this year. The initial steps have been taken; also, the matter of necessary financing has been investigated. The 1947 program had much more substance than the 1946 one had. The Committee is rather hopeful that the enrolment this year is going to be large. Preliminary figures indicate that 80 to 85 per cent of the number of students desired have been obtained.

The Recruitment Committee has expressed the opinion that the local physician can either set or alter the decision of a girl to enter nursing. In 1948, if the program continues to the extent that specific action can be taken so that the recruitment program can be brought to the attention of the physicians themselves, their influence would be most helpful.

In reply to a question as to what had been or is obstructing recruitment, Dr. Hullerman stated that many persons complain of unfavorable hours and, often, circumstances which they claim are inseparable from the profession of nursing, and there is prevalent a great deal of misinformation. However, he continued, the recent survey of the U. S. Department of Labor presents quite a favorable picture of the profession, and many hospitals are offering positions that are comparable with other positions available to women.

PRACTICAL NURSES

Father Schwitalla presented the following statement concerning the education, necessity for and supply of practical nurses:

I felt at first that this was a rather minor matter, but when I went over some of the papers and books that have been published, I discovered that a great deal has been written, that there has been much discussion and that it concerns a large number of persons. The schools of nursing seem to be fearful as to what is happening, anticipating the disappearance of the so-called basic professional nurse who has her three years of training;

they do not welcome a diffusion of professional attitudes, such as certainly would be the case if a great deal of the nursing were to be done by practical nurses. Another factor in the picture is that universities with a policy of issuing nursing certificates are preponderantly opposed to the issuance of anything lower than a degree. Hospitals in some localities are greatly concerned in the development of the practical nurse. Strange to say, those hospitals that seemed most in favor of the volunteer help during the war and shortly after seem now to be least in favor of the practical nurse. It seems to be the concensus of the hospitals that the practical nurse of today should be used to do the things which the Nurse's Aide did during the war. I find a growing lack of interest in the practical nurse today, even in those hospitals that had favorable experience with the volunteers. Some of this lack of interest may be due to a lack of understanding as to where the lines will be drawn. There are fifty schools for the training of practical nurses; only a very few require one year of high school education and only one requires two years.

It seems to me that those who are guiding the future of nursing are inclined to regard the development of more practical nurses as something that is here to stay. I am most concerned as to what the fate of the patient will be if any appreciable number of practical nurses are used either in the hospitals or in private practice.

During the discussion Dr. Fischelis asked how many states license practical nurses and was informed that there is some reference to them in the laws of nineteen states and the territory of Hawaii. He thought that when the practical nurses see that they have some status in a state and can obtain licenses, they are likely to think they are as good as registered nurses. Miss Switzer noted that there is much variety in the requirements of the states and the schools, that Massachusetts has had a practical nurse-training program the graduates of which were substantial people in what they could do and the responsibilities they could take. Father Schwitalla said that the woman who heads the organization of practical nurses seems to have a definite conviction that unless we do have practical nurses we are not going to be able to provide a healthy American people, and that in one of her recent papers she stated that there is a place for this kind of woman in health care quite distinct from the place of the graduate nurse. He mentioned an interesting expression in a recent article to the effect that a graduate nurse should be looked on as an Army officer and the practical nurse as one of the rank and file, the implication being that we should have very many more practical nurses and few graduate nurses.

AMERICAN MEDICAL ASSOCIATION COMMITTEE TO STUDY NURSING PROBLEMS

The Chairman informed the Joint Committee that pursuant to action by the American Medical Association House of Delegates in June a Committee to Study Nursing Problems had been appointed by the President of the Association with Dr. Thomas P. Murdock of Connecticut as chairman, and that while the new committee has not yet had a meeting its members have been studying available material and literature. He read the following excerpts from a letter received from Dr. Murdock:

As yet the Committee to Study Nursing Problems has not met due to vacations and previous commitments. So far we have reviewed all of the nursing journals having to do with this problem. We have the statements made by Dr. Frank Lahey and Dr. Naffziger. We have reviewed the report of the American Surgical Society and have reviewed all of the literature gathered by Dr. MacEachern from the American College of Surgeons. We have reviewed the study that was made for the nurses by the U. S. Department of Labor. We have had correspondence with many of the leaders of nursing in America. We have been in contact with Mr. Frederick Ayer of Boston, who seems to know a good deal about this situation as a layman. Dr. Frank Dickinson is working on retirement studies. We have purposely postponed meeting with the American Hospital Association group and the nursing groups until we are in better position to discuss this problem.

It looks like an enormous job, and I think that probably we will only report progress at the meeting in Cleveland but that we will have a full report for the annual meeting in Chicago.

NAVY EDUCATIONAL PROGRAM

Captain Eaton informed the Joint Committee regarding the program of the Navy in medical education as follows:

The Navy's program in medical education is now well established. Continual improvement is being made in the hospital provisions; libraries are being established and elaborated, and the eight specifically named hospitals to carry on a major portion of the program are now functioning. We are sending men into the civilian hospitals for training courses, some of which cover many months.

The entrance of new officers into the Navy Medical Corps is not encouraging. The following memorandum has the approval of those in the Bureau of Medicine and Surgery who have to do with this program:

The legal office of the Surgeon General has been asked to consider and make recommendations concerning scholarships to medical students with the idea in mind of having a reliable and constant source of medical officers for the Medical Corps of the Navy. It is believed that if legislation is introduced it will apply in the case of the Armed Services generally and possibly the Public Health Service, although that will of course be a matter for the Congress to determine.

It is considered that the granting of scholarships to worthy students would to a measure aid in alleviating the present shortage of physicians, not only in the Armed Services but also in civilian life. In addition, it would enable capable and ambitious young men, who otherwise could not do so because of lack of money, to pursue a medical education.

Such a program would depend on the cooperation and support of civilian medical agencies and medical schools and it is desired to ascertain their reaction, not only to the desirability of the idea, but also as to the practical details involved. Should opportunity present itself, it is requested that you present the matter informally to the planning board of the American Medical Association or the Emergency Medical Service Committee of the American Medical Association.

Miss Switzer asked if it was implied that a man accepting the terms outlined committed himself to service for a certain length of time, and Captain Eaton answered in the affirmative. Miss Switzer said that one or two states are attempting to finance medical students in that way with the provision that they practice in the state for a stated period.

RURAL MEDICAL SERVICE

Dr. Mulholland presented the following information with respect to activities of the Committee on Rural Medical Service:

The plans for the next National Conference on Rural Health to be held in Chicago in February 1948 are well under way. The main theme probably will be Rural Health and the Child. The Committee on Rural Medical Service is cooperating with the Council on Medical Service in connection with its regional meeting to be held in New Orleans this fall. The Committee feels that it is of great importance to stimulate members of local and state medical societies to consider the problems of rural medical service. It is sometimes difficult to get the state and local societies to do very much. It is planned that each regional chairman of our Committee will visit each state medical society meeting in his district and ask for support.

Material is being sent to the various farm journals from the American Medical Association in the hope that those publications will print it. Representatives of our Committee met recently with the Women's Committee of the National Cooperative Milk Producers Federation and discussed ways and means of improving the health of persons in rural areas.

PROGRESS REPORT ON AMERICAN RED CROSS BLOOD PROGRAM

Dr. Draper offered the following statement concerning the Red Cross Blood Program:

The program of the Red Cross for the collection of blood was approved by the House of Delegates of the American Medical Association at its annual session this year. The Board of Governors of the Red Cross approved the program at a recent meeting in Cleveland. Vice Admiral Ross T. McIntire, former Surgeon General of the U. S. Navy, has accepted the directorship of the program and is now engaged in organizing the work. It is hoped that by Christmas this year there will be at least one blood donor center set up in each of the five Red Cross areas. Many applications for the establishment of blood donor centers have been received, and these applications are given very careful consideration with respect to facilities offered.

The principal features of the program are: (1) collection; (2) processing—breaking it down into its derivatives, packaging and storing; (3) distribution; (4) continuation of research; (5) maintenance of the highest standards in collection, processing and distribution, and (6) educational and promotional activities which are extremely necessary in getting persons to donate blood. The budget for the blood program has been set up, and several key persons have been employed. Admiral McIntire and I are determined that this program shall be conducted only with the hearty approval of the medical societies and health authorities in the areas where it is established.

COURSES IN MEDICAL ASPECTS OF ATOMIC ENERGY

General Armstrong asked how many medical schools have recognized the impact of public opinion to the extent that they have instituted courses in the medical aspects of the atom. Father Schwitalla said he knew of none in the undergraduate classes, and Dr. Mulholland stated that his school at Charlottesville, Va., had sent five of its medical students to Oak Ridge, Tenn., for study and observation. General Armstrong knew of two schools that have set up such courses and supposed that they are the graduate schools. It was his opinion that the military services are recognizing the importance of every medical officer knowing something about the subject, and he wondered how soon a similar recognition on the part of civilian physicians might be expected.

TIME AND PLACE OF NEXT MEETING

It was decided to hold the next meeting at American Medical Association Headquarters in Chicago on Saturday, Dec. 6, 1947.

GOVERNMENT SERVICES

ARMY

NEW CHIEF OF ARMY NURSES

The Surgeon General's Office announced October 1 the appointment of Col. Mary G. Phillips as chief of the Army Nurse Corps to succeed Col. Florence A. Blanchfield, who has retired after nearly thirty years of service. Colonel Phillips is a native of Wisconsin. She has been in the Army Nurse Corps since 1939 and during the recent war was deputy superintendent and later was director of nurses in the Pacific theater of operations.

NURSES AND DIETITIANS COMMISSIONED

The President tendered recess appointments in the Regular Army in October to one hundred and fifty-three officers and former officers of the Army Nurse Corps, thirty-one hospital dietitians, nineteen physical therapeutists and three occupational therapeutists, many of whom had served during World War II. These appointments are the first in the integration program resulting from the establishment by the last Congress of the Army Nurse Corps and the Women's Specialist Corps as part of the Regular Army. This is the first time that commissioned officer status has been given to occupational therapeutists. Among the nineteen physical therapeutists commissioned was Major Emma E. Vogel of Mankato, Minn., who has continuously served the medical department of the Army for twenty-eight years and who during World War II was director of physical therapeutists in the Surgeon General's Office.

DEPENDENTS OFFERED AIR TRAVEL TO PACIFIC AREA

A limited number of dependents of the Army and Air Force enlisted and officer personnel stationed in the Pacific area will be flown to their destinations in four-engine planes of the U. S. Air Transport Command, which will carry special equipment for the preparation of baby foods en route, since infants aged 6 months or over may now be flown. All dependents may be given the opportunity to indicate preference for air or surface travel. This arrangement, the War Department announced, has been made to avoid delay during the reconversion of many Army transport vessels for peacetime use.

ARMY AWARDS AND COMMENDATIONS

Lieut. Col. Philip S. Foisie

The Bronze Star Medal has been awarded to Lieut. Col. Philip S. Foisie (then Major), M. C., U. S. A., of Boston. The citation read as follows: For meritorious service in connection with military operations as Assistant Chief of Surgical Service, 7th General Hospital, from Dec. 20, 1943 to July 19, 1944. On two occasions Major Foisie was charged with establishing and opening hospital plants and placed in command of hospital detachments. Although inexperienced in the administrative and executive duties required, he demonstrated such qualities of adaptability, leadership, wisdom and devotion to duty that these missions were performed with complete success. The outstanding accomplishments of Major Foisie reflect great credit on himself and the armed forces of the United States. He was also awarded the Legion of Merit for outstanding service as chief, Surgical Service, 129th General Hospital in the ETO from July 20, 1944 to June 11, 1945. Dr. Foisie graduated from Harvard Medical School in 1924 and entered the military service June 19, 1943.

PERSONALS

Major Gen. Merritte W. Ireland, retired, formerly Surgeon General of the Army, has resigned as president of the Army Mutual Aid Association after eighteen years of service and as a director of that organization for thirty-two years. He has been succeeded on the board by the present Surgeon General, Major Gen. Raymond A. Bliss.

George W. Hervey, Ph.D., former chief administrative analyst for the director of plans of the Surgeon General's Office, has been named head of the statistical division of the American Red Cross National Blood Program and will establish methods for collecting and analyzing the data related to a program which will undertake, under the general direction of Ross T. McIntire, former Surgeon General of the Navy, to provide blood and blood derivatives without charge throughout the nation. Dr. Hervey is a veteran of both World Wars, having been released as a colonel in 1946. He is a graduate from Rutgers, receiving his M.A. degree from Missouri and his Ph.D. degree from Harvard.

NAVY

NAVY DAY

The twenty-sixth observance of Navy Day, October 27, was celebrated at all naval medical establishments. At the Medical Center, Bethesda, Md., there was an "open house" to the public, and staff members conducted visitors through the Center. The Surgeon General, Rear Admiral C. A. Swanson, was the principal speaker in the evening.

FLIGHT SURGEONS GRADUATE

On Sept. 12, 1947 eighteen naval medical officers received their designations as flight surgeons at the Naval Air Station, Pensacola, Fla., after having completed twelve weeks of classroom and laboratory work followed by seven weeks of flight training and ground school. The class convened on May 8, with thirty-three officer members. Fifteen were graduated as aviation medical examiners at the end of twelve weeks of instruction, while the remaining members continued in active flight training for seven more weeks. Capt. William Sinton, U. S. N., commanding officer of the Naval Air Station, gave the commencement address.

Capt. Bruce V. Leamer (MC) was relieved as officer in charge of the School of Aviation Medicine and Research by Capt. Wilbur E. Kellum (MC), Sept. 12, 1947. Other recent additions to the staff of the school are Comdr. Charles F. Gell (MC), as executive assistant to the officer in charge with additional teaching duties in physiology, and Lieut. Comdr. Philip B. Phillips (MC), as head of the Neuropsychiatry Department.

PERSONALS

Rear Admiral T. C. Anderson (MC), commandant, Naval Medical Center, Bethesda, Md., recently addressed the University of Michigan Medical School, Ann Arbor, at their annual convocation on "Progress of Medical Education."

Rear Admiral Lamont Pugh (MC), Assistant Chief, Bureau of Medicine and Surgery, was guest speaker at the first regular monthly meeting at the Naval Hospital, Philadelphia, October 24.

The Swedish government recently appointed Capt. Erik G. Hakansson (MC), U.S.N., commanding officer, Naval Medical Research Institute, Bethesda, Md., a Knight of the Royal Order of Vasa, first class, in recognition of his services during the tenth International Congress of Military Medicine and Pharmacy in 1939. The award was presented by Rear Admiral T. C. Anderson, commandant, National Naval Medical Center, Bethesda, Md.

Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as relate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

ARIZONA

Fellowship Awarded.—Dr. Hilda H. Kroeger, Phoenix, director of maternal and child health for the State Department of Health since 1941, has been awarded a two year fellowship by the U. S. Public Health Service to study hospital administration at Yale University, New Haven, Conn.

CALIFORNIA

Appointed Hospital Inspections Chief.—Dr. John T. Smiley, former assistant superintendent in charge of employees' health at Ancker Hospital, St. Paul, has been appointed chief of the Bureau of Hospital Inspections of the state health department. Dr. Smiley, a graduate of Northwestern University Medical School, 1940, served with the U. S. Army during the war.

Assistant Director of Public Health Wanted.—Applicants are being sought for the position of assistant director of public health for the City and County of San Francisco. Applications must be filed by Nov. 7, 1947 for examination beginning on November 28. A written examination will be given in various cities of the United States for the convenience of the applicants. The oral test will be given only in San Francisco. Nonresident citizens may file and participate in the examination. For application blanks address San Francisco Civil Service Commission, Room 151-154, City Hall, San Francisco.

Expand School of Public Health.—An expanded program at the University of California School of Public Health, Berkeley, created by a demand for additional work in this field, has led to the appointment of the following additional members of the staff: Dr. Jessie M. Bierman, chief of the Bureau of Maternal and Child Health, California State Department of Health since 1942, has been appointed professor of maternal and child health. A graduate of Rush Medical College, Chicago, 1927, Dr. Bierman has been assistant director of the Division of Health Services of the U. S. Children's Bureau, and formerly was director, Division of Maternal and Child Health, Montana State Department of Health. Dr. William W. Stiles, Berkeley, formerly industrial physician at Eastman Kodak Co., Rochester, N. Y., has been appointed associate professor of public health. Dr. Stiles was an instructor in the department of military sanitation, Medical Field Service School at Carlisle Barracks, Pa., during the war. Dr. Charles H. Hine, formerly research assistant with the Wisconsin Alumni Research Fund, has been appointed lecturer in toxicology.

COLORADO

Grants for Research.—The National Cancer Institute of the U. S. Public Health Service has granted $10,000 to the University of Colorado School of Medicine, Denver, for cancer research. Other grants totaling $6,618.20 have been made for research to be done by various members of the faculty.

Open School of Physical Therapy.—The University of Colorado Medical Center opened its School of Physical Therapy this fall. The medical director is Dr. Harold Dinken, associate professor and director of the department of physical medicine and rehabilitation of the Medical School and Hospitals of the Center. Miss Mary Lawrence will be the technical director.

CONNECTICUT

State Hospital for Alcoholic Addicts.—Preparation of plans for the construction of a $425,000 hospital in New Haven for alcoholic addicts has been authorized by the State Controller's Office. Construction of the hospital for use as a treatment center by the State Commission on Alcoholism was authorized by the 1947 General Assembly.

Establish Rheumatic Fever Program.—The New Haven Department of Health is establishing a program for the child with rheumatic fever or heart murmur in cooperation with the State Department of Health, the department of pediatrics, Yale University School of Medicine. A registry of 550 school children known to have heart murmurs or to have had rheumatic fever has been established. At the diagnostic clinic in the Grace-New Haven Community Hospital children are seen on an appointment basis on referral by physicians, health or welfare personnel and occasionally by direct request of the patient. Reports are sent to physicians for treatment and follow-up, or the child may be referred to the Pediatric-Cardiac Clinic for further service. Public health nursing organizations of the city and social agencies cooperate. Environment sanitation studies are also to be done by the Department of Health.

GEORGIA

Court Upholds Pasteurization Ordinance.—The Fulton County Superior Court held that the ordinance of the city of Atlanta providing that "no fluid milk shall be sold to the ultimate consumer except grade A pasteurized or certified milk pasteurized" is not oppressive, burdensome, arbitrary and unreasonable or unconstitutional, in a case which came before the court during the summer. The case was not appealed to a higher court.

ILLINOIS

Open Sixteenth Cancer Clinic.—The sixteenth state-aided cancer diagnostic clinic has been opened at St. Elizabeth Hospital in Danville. The new clinic, under the direction of Dr. Emmett M. Laury, will be open every Wednesday at 11 a. m. Dr. Maurice B. Jacobs, Chicago, is pathologist, and Dr. Gardner S. Reynolds is roentgenologist.

Graduate Conference at Lincoln.—The Illinois State Medical Society has arranged a graduate conference for the Fifth Councilor District at Lincoln State School and Colony, Lincoln, November 13, beginning at 12 o'clock. Subjects for discussion include infantile paralysis, obstetric hemorrhages, penicillin and streptomycin, peptic ulcer and diagnosis and treatment of anal fissure and fistula. Drs. Percy E. Hopkins, Chicago, and Harold M. Camp, Monmouth, will discuss "Our Prepayment Medical Care Plan" at the dinner at the Elks Country Club.

New Hospital for Anna.—The city of Anna has applied for federal and state aid for the construction of a new public general hospital, and plans have been approved for a fifty bed hospital to cost $663,500, of which one third has been requested from federal funds and one third from state funds. The remaining construction costs will be provided from local funds already available and from contributions pledged by residents of the community. A tax levy has been voted to insure operational and maintenance costs for the hospital, which will be owned and operated by the city. At present, hospital services for Anna are provided by the Willard Memorial Hospital, a sixteen bed frame structure more than forty years old, which is to be abandoned on completion of the new building.

Chicago

Phemister Lectureship Proposed.—The establishment of a Dallas Burton Phemister Lectureship at the University of Chicago has been proposed. Friends and students will undertake to raise a $30,000 fund for that purpose. Dr. Leon O. Jacobson, associate dean, division of biological sciences, is chairman of the Phemister Fund. Dr. Phemister, who recently relinquished his duties as chairman of the department of surgery, which he organized twenty-two years ago, is continuing to work at the university as the Thomas D. Jones professor of surgery. He is also president-elect of the American College of Surgeons.

Dr. Paul to Give the Gehrmann Lectures.—Dr. John R. Paul, Yale University School of Medicine, New Haven, Conn., will deliver the Gehrmann Lectures at the Chicago Professional Colleges of the University of Illinois, November 19-20 at 1 p. m. in room 221 of the Dentistry-Medicine-Pharmacy Building. On November 19 Dr. Paul will speak on "Poliomyelitis—Certain Epidemiological Aspects," and on November 20 will discuss "Poliomyelitis—The Clinical Disease." The Gehrmann Lectures were established in 1926 in memory of Dr. Adolph Gehrmann, former professor of bacteriology and public health at the University of Illinois.

LOUISIANA

Expand Sanitary Services.—The section of sanitarian services in the division of local health services of Louisiana's State Department of Health has been added to better organize and coordinate sanitary activities throughout the state. At present the section will emphasize and expand its activities in restaurant, restroom and hotel sanitation; typhus control; excreta disposal systems; sewer connections, and rabies control.

Dr. Burch to Head Tulane Department of Medicine.—Dr. George E. Burch, associate professor of clinical and experimental medicine, Tulane University of Louisiana School of Medicine, New Orleans, has been appointed chairman of the department of medicine and professor of medicine to succeed the late Dr. John H. Musser. Dr. Burch was awarded the American Medical Association's gold medal for the most orig-

inal exhibit at the recent annual meeting in Atlantic City. The research was conducted in cooperation with Dr. Paul Reaser, former faculty member at Tulane. Dr. Burch was graduated from Tulane, served his internship at Charity Hospital, New Orleans, and was appointed instructor in medicine at Tulane in 1935. He was named associate professor of medicine in 1943. Dr. Burch has served on the staff of the Hospital of the Rockefeller Institute for Medical Research; has been consultant in medicine (cardiovascular) to The Surgeon General of the United States Army; consultant in cardiovascular diseases, Foundation Hospital (Ochsner Clinic), New Orleans, and is senior visiting physician, Charity Hospital, and visiting physician, Touro Infirmary.

MASSACHUSETTS

Dr. Gross Receives the Matas Medal.—In ceremonies Oct. 3 at Tulane University of Louisiana School of Medicine, New Orleans, Dr. Robert E. Gross, assistant professor of surgery in Harvard Medical School, Boston, received the Matas Award in Vascular Surgery. This was the fourth presentation of the award since it was established in 1933 by the executors of the will of the late Violet Ida Hart, New Orleans patient of Dr. Matas.

Haven Emerson to Give the Cutter Lecture. — The Harvard School of Public Health, Boston, announces that Dr. Haven Emerson, emeritus professor of public health practice, Columbia University College of Physicians and Surgeons, New York, will deliver the Cutter Lecture on Preventive Medicine on November 24 at 5 p. m. in Amphitheater D of the Harvard Medical School. His subject will be "Whither the Pegasus of Public Health?" The lectures have been held since 1912. Members of the medical profession, medical and public health students and others interested are cordially invited to attend.

MICHIGAN

State Medical Election. — At the annual meeting of the Michigan State Medical Society September 24-26 in Grand Rapids, Dr. Patrick L. Ledwidge, Detroit, was installed as president and Dr. Edward F. Sladek, Traverse City, was chosen president-elect.

Conference on Cancer at Grand Rapids. — The Kent County Medical Society will present a program on cancer at the Pantlind Hotel, Grand Rapids, November 13 at 10 a. m. Subjects under discussion by both state and out of state physicians include cancer of the lung, uterus, breast and stomach. The evening session, beginning at 8 o'clock, will be open to the public.

Former Students Honor Dr. Sturgis.—More than a hundred doctors who have served with Dr. Cyrus C. Sturgis, chairman of the department of internal medicine, University Hospital, Ann Arbor, gave a banquet in his honor October 1 at the Allenel Hotel. A graduate of Johns Hopkins University School of Medicine, Baltimore, 1917, Dr. Sturgis came to the University Hospital in 1927 from Harvard Medical School, Boston. The occasion marked Dr. Sturgis' twentieth anniversary as chairman of the department at University Hospital and as director of Thomas Henry Simpson Memorial Institute for Medical Research. He is also professor of internal medicine, University of Michigan Medical School.

MISSOURI

Personal.—Dr. Howard B. Goodrich, Hannibal, has been reelected president of the State Board of Medical Examiners of Missouri.——Dr. Oliver H. Lowry will take up residence as head of the department of pharmacology, Washington University School of Medicine, St. Louis, on December 1. For five years Dr. Lowry has been with the staff of the Public Health Research Institute of New York City. He graduated from Rush Medical College in 1937.

Appoint Two More Assistant Deans.—With the addition of Dr. Thomas H. Hunter, New York, and Robert I. Watson, Ph.D., Pittsburgh, to the staff, Washington University School of Medicine, St. Louis, now has three assistant deans under Dr. Robert A. Moore, dean. Dr. Hunter formerly was instructor in medicine at Columbia University College of Physicians and Surgeons, New York. Robert I. Watson, Ph.D., assistant professor of psychology at Carnegie Institute of Technology in Pittsburgh 1946-1947, has become associate professor of medical psychology and assistant dean, acting as counselor to students. He received his Ph.D. from Columbia University, New York. Dr. Merl J. Carson continues as assistant dean and director of the division of postgraduate studies.

NEW MEXICO

Dr. Elman to Address Clinical Society. — The New Mexico Clinical Society, organized in January 1947 to sponsor monthly lectures by nationally known physicians, will be addressed by Dr. Robert Elman, St. Louis, on November 7 on "The Mechanism and Treatment of Protein Deficiency." On October 17, Dr. Paul D. White, Boston, addressed the group on "Important Advances in the Diagnosis and Treatment of Heart Disease During the Past Five Years."

NEW YORK

Graduate Lectures.—The Medical Society of the State of New York and the state department of health have arranged a graduate lecture for the Dutchess County Medical Society, November 12 at 8:30 p. m. at the Hudson River State Hospital, Poughkeepsie. Dr. Frederick S. Wetherell, Syracuse University College of Medicine, Syracuse, will speak on "Relation of the Sympathetic Nervous System to General Medical Problems." A graduate lecture for the Suffolk County Medical Society will be given November 5 at the Riviera Beach Club, Brightwaters, Long Island, by Dr. Albert F. R. Andresen, Long Island College of Medicine, on "Gall Bladder Disease."

Spastic Paralysis Center Opens. — A spastic paralysis center was opened October 15 in LeRoy on the estate given to the University of Rochester by Mr. and Mrs. Ernest L. Woodward (THE JOURNAL, Jan. 25, p. 256). Dr. Frederick N. Zuck, clinical research associate in the cerebral palsy program sponsored by the National Foundation for Infantile Paralysis at the University of Rochester School of Medicine, will be in charge of patients; Mrs. Kathleen Wingate, physical therapeutist at Strong Memorial Hospital, will be head physical therapeutist. The clinic, which has been named in honor of Mrs. Woodward, will be conducted by the University as an integral part of Strong Memorial Hospital in conjunction with the National Foundation for Infantile Paralysis, the State Health Department and the day clinic of the Rochester Cerebral Palsy Association. The cost of technical personnel is being borne in part by the National Foundation under a $292,000 grant for a five year program of research to improve methods of treatment of children disabled by infantile paralysis and cerebral palsy. The state will pay the costs of operation and patient care. Dr. R. Plato Schwartz, associate professor of orthopedic surgery at the Rochester Medical School, is directing the research program. The state legislature appropriated $150,000 on recommendation of the State Legislative Cerebral Commission. Training of personnel will be a major part of the university's program in any or all of the three major divisions of the project. Applications for admission to the Edith Hartwell Clinic will be made through Strong Memorial Hospital, and a special committee appointed by Dr. George H. Whipple, dean of the medical school, will make final determination on applications.

New York City

Surgical Lectures at Mt. Sinai.—A series of lectures on "Recent Advances in Surgery" will be given at Mt. Sinai Hospital from December through April on Wednesday evenings at 8:30. Dr. Dallas B. Phemister, of the University of Chicago, will open the series December 3 on "Lesions Arising from Disturbances of the Circulation of the Bones and Joints." On December 17 Dr. D. W. Gordon Murray, Surgeon, Toronto General Hospital, demonstrator in surgery, University of Toronto, Canada, will speak on "The Artificial Kidney."

Seminar on Progress of Physical Medicine.—The New York Polyclinic Medical School and Hospital will present a seminar on the progress of physical medicine, December 1-3. Question periods will be a part of each session. A program of visits and demonstrations will be held at Bellevue Hospital, the Hospital for Special Surgery, the Hospital for Joint Diseases and the Montefiore Hospital for Chronic Diseases. For information, address Dr. Richard Kovacs, Polyclinic Medical School and Hospital, 345 W. Fiftieth Street, New York 19.

Friday Afternoon Lectures. — The New York Academy of Medicine is sponsoring the twenty-second series of Friday Afternoon Lectures for doctors and medical students at 4:30. The series opened October 31 with Dr. Harold M. Marvin, New Haven, speaking on heart disease. Other lectures will be:

November 7, Dr. J. William Hinton, sympathectomy in advanced essential hypertension.
November 14, Dr. Albert H. Aldridge, pelvic infections.
November 21, Dr. Franklin M. Hanger, diseases of the liver.
December 5, Dr. Frank L. Horsfall Jr., atypical pneumonia and influenza.
December 12, Dr. William DeW. Andrus, suppurative diseases of the lung.

Dr. Kronfeld to Give the Schoenberg Lecture.—The Mark J. Schoenberg Memorial Lectureship has been established in honor of Dr. Schoenberg's interest and original work in the control of glaucoma under the joint sponsorship of the New York Society for Clinical Ophthalmology, of which he was founder and president, and the National Society for the Prevention of Blindness, which he served as chairman of the committee on glaucoma. The first lecture will be held at the New York Academy of Medicine December 1 at 8 p. m., with Dr. Peter C. Kronfeld, Chicago, speaking on "The Canal of Schlemm." For many years Dr. Schoenberg was instructor in ophthalmology at Columbia University College of Physicians and Surgeons, and chief in the glaucoma clinic, Herman Knapp Memorial Hospital. He died Feb. 15, 1945.

OKLAHOMA

Hospital News.—A gift of $300,000 from the Price Foundation of Greenwich, Conn., to the Benedictine Sisters' charity hospital at Guthrie was announced at recent ceremonies attending the laying of the cornerstone.

Outing at Lake Murray.—The Carter County Medical Association, under the direction of Dr. James M. Gordon, Ardmore, president, met at Lake Murray early in October. After dinner Dr. George Garrison, professor of pediatrics, University of Oklahoma School of Medicine, Oklahoma City, spoke on diseases and nutrition of the newborn. A sight-seeing tour in motor boats along the hundred and thirty-five mile shore line of Lake Murray preceded the feast.

WISCONSIN

First Gundersen Lecture.—The first in a series of lectures, made possible through the generosity of the Gundersen Clinic in honor of the late Dr. Adolf Gundersen of LaCrosse, was given at the University of Wisconsin October 15. Dr. Erik Ask-Upmark spoke on "The Spleen and Some of Its Disorders." Dr. Gundersen was one of the pioneer physicians and surgeons in Wisconsin. He served the state university as one of its regents.

Form Rheumatism Association.—Physicians from various parts of the state met September 15 and formed the Wisconsin Rheumatism Association (1) to cooperate with the American Rheumatism Association, (2) to sponsor and assist in a state program for the prevention of rheumatism and for improved care and rehabilitation of patients with rheumatism, (3) to promote the education of physicians regarding the prevention and treatment of rheumatism, (4) to accumulate data on the rheumatic diseases and (5) to receive and expend money to foster the purposes of the association. Dr. Milton C. Borman, Milwaukee, was elected president, and Dr. Campbell C. Edmondson, Waukesha, secretary-treasurer.

GENERAL

Social Work Fellowships.—A limited number of $2,400 fellowships are available to experienced social workers who have a masters degree for advanced training in teaching and administrative responsibilities leading to a certificate for advanced psychiatric social work. The fellowships are offered by the University of Pittsburgh, the School of Social Work, in cooperation with the Veterans Administration Hospital at Topeka, Kan., and the Menninger Foundation Field Training Center for Psychiatric Social Work.

Shoes for Mismated Feet.—The Benefit Shoe Foundation, a nonprofit corporation offering single shoes and odd pairs at cost for amputees, paraplegics and others with mismated feet, began operation October 14 at the Bristol Manufacturing Corporation, Bristol, R. I. The foundation will not attempt to provide orthopedic or special shoes of any kind. It will simply make available regular standard make shoes singly or in mismated pairs. The foundation was started at the suggestion of the National Foundation for Infantile Paralysis.

Women Doctors Designate Blackwell Day.—The one-hundredth anniversary of the entrance of the first woman into medical school, November 7, has been designated as Blackwell Day by the Medical Women's Library Committee of the American Medical Women's Association, in honor of Dr. Elizabeth Blackwell, the first woman in the world to receive an M.D. degree. The association is raising a fund of $500,000 with which to erect a Medical Women's Library and Blackwell Memorial Hall on the campus of the Woman's Medical College, Philadelphia, which has given the site and vouched for the upkeep. The library is also seeking books written in any language by or about women in medicine, dentistry or science for the library (THE JOURNAL, July 19, p. 1035).

Southern Association to Meet in Baltimore.—The Southern Medical Association has accepted the invitation of the Baltimore City Medical Society to hold its annual meeting in Baltimore November 24-26. The entire scientific program will be presented by faculty members of the Johns Hopkins Medical School and the University of Maryland School of Medicine and College of Physicians and Surgeons, as well as by prominent members of the profession in Baltimore. A general public session will be held Monday evening. The twenty-one sections of the association will hold their meetings Tuesday and Wednesday.

Dr. Verhoeff Awarded Dana Medal.—The National Society for the Prevention of Blindness has awarded the Leslie Dana Medal this year to Dr. Frederick H. Verhoeff, Boston, for outstanding achievement in the prevention of blindness and the conservation of vision. The medal was presented during the faculty luncheon of the American Academy of Ophthalmology and Otolaryngology in Chicago, October 16. Dr. Verhoeff is professor of ophthalmic research emeritus at Harvard Medical School and consulting chief of ophthalmology, Massachusetts Eye and Ear Infirmary, Boston. He graduated from Johns Hopkins School of Medicine in 1899; he served as a major in the medical corps of the U. S. Army in 1918, as president of both the American Ophthalmological Society and the New England Ophthalmological Society and as chairman of the Section on Ophthalmology of the American Medical Association. Dr. Verhoeff was selected for the Dana Medal by the St. Louis Society for the Blind, through which it is offered by Mr. Leslie Dana, St. Louis, on recommendation of the Association for Research in Ophthalmology.

Research on Orthopedic Appliances.—A multiple research fellowship on orthopedic appliances has been established at the Mellon Institute, Pittsburgh, by the Sarah Mellon Scaife Foundation of Pittsburgh. Under the guidance of orthopedists and with the cooperation of leading organizations in the field and manufacturers of orthopedic appliances, the fellowship will accord particular attention to problems of mechanical design, improvements in materials of construction and methods of fitting braces and other orthopedic devices. John L. Young, Ph.D., a research specialist in metallurgy and mechanical engineering who has been active on the investigatory staff of Mellon Institute since 1928, heads the program as senior fellow and assistant director. Eugene F. Murphy, M.E., staff engineer, committee on artificial limbs, National Research Council, Washington, D.C., will serve as advisory fellow. Several research assistants will complete the initial personnel of the fellowship. The medical advisory committee of the fellowship is under the chairmanship of Dr. Paul B. Steele, professor of orthopedic surgery, University of Pittsburgh School of Medicine. Other members of the committee are Drs. John A. Heberling and Carl C. Yount.

International Cancer Research Commission.—At the Fourth International Cancer Research Congress, in St. Louis, September 2-7, an International Cancer Research Commission was established as an almost autonomous division of the Union Internationale Contre le Cancer by the thirty-nine nations represented. It is expected that the number of member nations soon will be increased. Each nation, regardless of size, has but one representative on the commission, and all representatives have equal voting power. Meetings are to be held annually, never consecutively in the same country. The following executive committee of the International Commission was elected, each member having an alternate to act for him if necessary: Ignacio Millan, Mexico, chairman, with F. Leborgne, Uruguay, alternate; Edmund V. Cowdry, United States, with William U. Gardner, United States, alternate; V. R. Khanolkar, India, with Tu-Shan Yung, China, alternate; J. H. Maisin, Belgium, with A. Lacassagne, France, alternate, and A. Haddow, England, with J. Engelbreth-Holm, Denmark, alternate. The purpose of this commission is to promote international cooperation in cancer research. This newly created International Cancer Research Commission does not in any way replace the much larger International Cancer Research Congress, which will continue to meet in different parts of the world at intervals of about three years.

Nobel Prize Winners in Medicine.—The 1947 Nobel Prize in physiology and medicine has been awarded to Dr. Carl F. Cori and his wife, Dr. Gerty Cori, of St. Louis, and Dr. Bernardo A. Houssay of Buenos Aires, Argentina. Half of the $48,580 cash prize will go to Dr. Houssay, and the Coris will share the other half. Dr. Cori and his wife were given the award for their discovery of the process in the catalytic metabolism of glycogen. The enzyme phosphorylase, which they isolated, begins the conversion of animal starch into sugar in the body. Dr. Houssay was honored for his discovery of

the significance of the hormone produced by the frontal lobe of the hypophysis and its importance in the distribution of glycogen in the body and in the control of diabetes. Dr. Cori is head of the biochemistry department and his wife is an associate professor of research in biological chemistry at Washington University School of Medicine, St. Louis, where they have been on the faculty since 1931. They graduated in medicine in Prague in 1920, came to this country in 1922 and became naturalized citizens in 1928. Dr. Houssay received his M.D. degree at the Colegio Britanico and Faculties of Pharmacy and Medicine, Buenos Aires, 1904. He was professor of physiology at the University of Buenos Aires, 1919 to 1943, and with the assistance of the Rockefeller Foundation organized the Instituto de Biologica y Medicina Experimental in 1944. He has been a frequent lecturer in the United States.

Prevalence of Poliomyelitis.—Reports of cases of poliomyelitis for the periods indicated have been received from the division of public health methods, U. S. Public Health Service:

Division and State	Week Ended Oct. 18, 1947	Week Ended Oct. 19, 1946	Median, 1942-1946	Total to Oct. 18, 1947	Total to Oct. 19, 1946	Total * March 16-Oct. 18, 1947	Total * March 17-Oct. 19, 1946
New England:							
Maine	0	5	1	37	31	34	31
New Hampshire	0	1	1	22	137	18	136
Vermont	0	15	3	28	52	20	48
Massachusetts	24	29	27	323	268	316	264
Rhode Island	1	6	1	135	81	134	81
Connecticut	2	14	12	129	96	126	88
Middle Atlantic:							
New York	56	63	63	1,014	1,165	978	1,132
New Jersey	7	12	12	249	213	243	207
Pennsylvania	28	5	7	400	222	386	210
East North Central:							
Ohio	78	32	23	1,197	614	1,187	599
Indiana	6	29	7	208	335	192	330
Illinois	25	99	42	755	2,159	733	2,151
Michigan	23	71	14	554	840	530	832
Wisconsin	7	61	16	185	1,072	161	1,059
West North Central:							
Minnesota	5	64	14	200	2,658	187	2,657
Iowa	6	25	13	148	500	140	491
Missouri	3	57	13	109	1,110	99	1,103
North Dakota	0	24	1	68	439	63	439
South Dakota	10	11	0	22	355	20	355
Nebraska	6	37	5	184	540	177	539
Kansas	2	70	14	86	916	68	912
South Atlantic:							
Delaware	1	2	2	127	28	127	28
Maryland	7	5	5	92	83	86	81
District of Columbia	1	1	1	19	24	17	23
Virginia	6	5	5	144	100	134	94
West Virginia	11	3	3	117	66	113	63
North Carolina	12	13	11	193†	117	178†	110
South Carolina	3	1	1	31	20	30	17
Georgia	4	11	6	71	147	64	139
Florida	13	9	1	98	532	73	483
East South Central:							
Kentucky	5	1	3	90	100	89	97
Tennessee	8	8	3	122	155	110	146
Alabama	0	7	2	46	365	33	362
Mississippi	2	8	3	45	279	28	262
West South Central:							
Arkansas	1	13	2	73	351	62	339
Louisiana	1	7	3	45	334	27	315
Oklahoma	2	16	9	50†	347	39†	341
Texas	4	18	16	159	864	134	836
Mountain:							
Montana	0	2	1	24	116	22	100
Idaho	13	1	1	198†	36	188†	36
Wyoming	0	0	0	16	112	13	111
Colorado	2	15	3	55	870	50	869
New Mexico	0	4	3	32	155	29	154
Arizona	1	1	1	29	104	26	101
Utah	1	5	5	11	123	6	117
Nevada	0	0	0	1	3	1	3
Pacific:							
Washington	7	33	15	125	429	117	396
Oregon	4	6	6	75	140	70	136
California	17	51	46	722	1,859	573	1,772
Total	415	976	...	8,863†	21,662†	8,251†	21,195
Median, 1942-1946	...	....	618	11,463		11,066	

* Last two columns show reported incidence since approximate seasonal low week (week ended between March 15 and 21).
† Figures changed by corrected reports.

Analysis of the Nursing Crisis.—The American Nurses' Association, 1790 Broadway, New York, has analyzed the underlying problems in the nursing crisis, pointing out that the demand for nurses has skyrocketed in the last few years and that several factors deter young women from joining the profession and discourage many already registered from continuing. Long hours, split shifts, lack of retirement provisions and minimum salary increases characterize the nurses' working conditions. Their responsibilities have increased, thus requiring higher standards of education and performance. The U. S. Department of Labor statistics for October 1946 gave the average salaries for nurses in all fields, with the majority providing their own living quarters, as $170 to $175 per month. The majority of nurses work forty-eight hours a week, and many work fifty-four or more hours. Twenty-six states, Hawaii and Puerto Rico have laws requiring licensure of all who nurse for hire. Without laws in all states the public is at the mercy of many unqualified persons. Increased demands for nursing service arise from increased public interest in health, the development of hospital plans, increased hospital construction and federal social legislation. The American Nurses' Association, in cooperation with state nurses' associations, has organized a counseling and placement service available without charge to nurses and employers to promote a more equitable distribution of nursing service. The association is cooperating with committees from other groups to assist in meeting the nursing problem.

LATIN AMERICA

Medical Election.—The Sociedate Médico-Cirúgica do Pará, Brazil, elected the following officers for 1947 to 1949: Drs. Luiz Araujo, president; Quaresma Gama, vice president, and Afonso Rodrigues Filho, secretary. Other officers are Drs. Orlando Bordalo, Oscar Miranda, Avertano Rocha, Otávio Lobo, Rosário Conte, Orion Loureiro and Raimundo Chaves.

Pan American Congress on Ophthalmology.—The Third Pan American Congress on Ophthalmology will meet at Havana, Jan. 4-10, 1948, to which the governments of all Pan American countries have been officially invited by the government of Cuba. Drs. Duke, Elder and Cass of England; Fuchs, Lindner, de Viena, Bailliart, Velter, Dollfus and Hartman of France and Verhagen and Thiel of Germany will be guests of honor. There will be an exhibit of amateur art by ophthalmologists, and space in the exhibit should be requested before November 15. Books, pamphlets and other publications of American ophthalmologists can be exhibited by request in the exhibits of ophthalmologic literature or distributed during the Congress. On the social program there will be a "Pan American evening" in which ladies and gentlemen will wear typical regional dress. Information may be obtained from Dr. Miguel A. Branly, General Secretary, Edificio Bacardi 70, Piso, Havana, Cuba.

FOREIGN

International Congress on Biology.—The first International Congress on Clinical Biology will be held in Paris, France, November 20-22 with Professor Polonovski as chairman and Professors Justin Besançon and Fleury as vice chairmen. The opening session will be devoted to reports on syphilis, anemias, new results of examination of the cerebrospinal fluid and new observations in gastric physiology and pathology. During the second day, reports will be presented on methods of determination of hemoglobin, blood proteins, hepatic insufficiency and the dosage of hormones. The final session will be on new methods of demonstration of Löffler's bacillus, exploration of cytohormones in sterility, diagnosis of bronchial tumors and the clinical importance of 17-ketosteroids.

Marriages

FRANK J. KROBOTH Jr. to Miss Teresa Musolino, both of Binghamton, N. Y., in Canandaigua, July 5.

JOHN F. MCCABE, Hartsdale, N. Y., to Miss Margaret Ellen Bradley of Glenside, Pa., June 24.

PHILLIP PENNINGTON, Bloomington, Ind., to Miss Barbara Boyer of Indianapolis, August 29.

ROBERT CHARLES HAILE to Miss Lucele Clare Brady, both of Washington, D. C., September 6.

ROBERT PAGE BOUDREAU, Syracuse, N. Y., to Miss Elizabeth Davis of Geneva, Ill., July 2.

THEODORE KATZ, Linden, N. J., to Miss Ilse Steinberger of New York, September 7.

FRANK L. KARP, Brooklyn, to Miss Thelma Rita Goldman of New York, October 12.

MEYER DEWITT SCHNALL to Miss Ruth Vivian Renick, both of New York, June 29.

JAMES J. SRAIL to Miss Bernice Belden, both of Moline, Ill., August 3.

RALPH J. KAHANA to Dr. Eda Malisoff, both of New York, July 28.

Deaths

Ewen Murchison MacEwen ✦ Iowa City; born in Greenwich, Prince Edward Island, Canada, Sept. 16, 1885; State University of Iowa College of Medicine, Iowa City, 1912; dean and professor of anatomy at his alma mater, where he joined the faculty as an instructor in anatomy in 1914, later serving as assistant and associate professor of anatomy and head of the department; president of the Association of American Medical Colleges in 1943, and in 1944 chairman of the executive council; member of the American Association for the Advancement of Science, American Association of Physical Anthropologists and the American Association of Anatomists; served as consultant for the Veterans Hospital; president of the First Federal Loan and Investment Company and vice president of the Iowa State Bank and Trust Company; died in the University Hospital September 2, aged 61, of coronary occlusion.

Charles Porter Small ✦ Chicago; born in Bangor, Maine, Nov. 16, 1863; Medical School of Maine, Portland, 1889; an Affiliate Fellow of the American Medical Association; past president of the Chicago Ophthalmological Society; formerly physician to the University of Chicago, instructor in ophthalmology at the Chicago Policlinic and clinical associate in the eye department at Rush Medical College; served as a captain in charge of the aviation examination unit, Central Department of the U. S. Army during World War I; secretary and director of the Ophthalmic Publishing Company; at one time contributor to the American Encyclopedia of Ophthalmology and others; died in Princeton, Ill., September 25, aged 83, of hypertensive heart disease.

Vaclav Horace Podstata ✦ San Francisco; born April 24, 1870; Chicago Homeopathic Medical College, 1895; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1900; associate clinical professor of psychiatry, emeritus, at the University of California Medical School; specialist certified by the American Board of Psychiatry and Neurology, Inc.; member of the American Psychiatric Association; formerly physician in charge of Oakwoods Sanitarium in Lake Geneva, Wis., superintendent of the Elgin (Ill.) State Hospital and physician in charge of the Livermore (Calif.) Sanitarium; for many years psychiatrist for the child welfare department of the schools of Berkeley; died August 15, aged 67, of pneumonia.

William Neer, Paterson, N. J.; born in Paterson, Aug. 22, 1866; College of Physicians and Surgeons, medical department of Columbia College, New York, 1891; fellow of the American College of Surgeons; formerly health officer; examiner for the draft board during World War I; part-time medical officer for the Wright Aeronautical Corporation during World War II; past president of the Passaic County Medical Society; for many years on the staff of St. Joseph's Hospital; died in Point Pleasant Hospital in Point Pleasant August 7, aged 81, of uremia, following fracture of the neck of the femur received in a fall from a bicycle.

Stephen L. Walczak ✦ Buffalo; born in Buffalo, Nov. 30, 1897; University of Buffalo School of Medicine, 1921; specialist certified by the American Board of Surgery; fellow of the American College of Surgeons; associate in surgery at his alma mater, 1942-1943; formerly member of the city board of health; served during World War I; chairman of the Selective Service Board of Appeals number 23 during World War II; consulting surgeon, J. N. Adam Memorial Hospital, Perrysburg; affiliated with the Millard Fillmore, Mercy and Edward J. Meyer Memorial hospitals; died August 11, aged 49, of coronary heart disease.

William Albert Taylor ✦ Ellensburg, Wash.; born in Toronto, Canada, Nov. 21, 1881; University of Toronto Faculty of Medicine, Toronto, 1907; specialist certified by the American Board of Surgery; member of the Western Surgical Association, Pacific Coast Surgical Association, North Pacific Surgical Association and the American Association for the Surgery of Trauma; fellow of the American College of Surgeons; affiliated with the Ellensburg General Hospital; surgeon for the Chicago, Milwaukee and St. Paul Railway and the Pacific Railway; died in Boston June 17, aged 65, of cerebral hemorrhage.

Lindley Dobson, Presque Isle, Maine; born in 1864; Bellevue Hospital Medical College, New York, 1891; member of the founders group of the American Board of Surgery; fellow of the American College of Surgeons; member of the American Medical Association and the New England Surgical Society; in 1941 received a "fifty year" medal of the type presented to members who have practiced for half a century by the Maine Medical Association; affiliated with the Presque Isle General Hospital; died July 4, aged 82, of carcinoma of the pancreas.

Mark Heiman ✦ Syracuse, N. Y.; Syracuse University College of Medicine, 1897; formerly demonstrator of anatomy at his alma mater; member of the American Academy of Dermatology and Syphilology, of which he had been president; past president of the Syracuse Academy of Medicine; past chairman of the section on dermatology and syphilology of the Medical Society of the State of New York; on the staffs of St. Joseph Hospital and St. Mary's Maternity Hospital and Infants Asylum; died July 2, aged 71, of hypertensive heart disease.

Joseph Richard Adams, El Dorado, Kan.; University of Louisville (Ky.) Medical Department, 1901; served during World War I; died in Wichita July 21, aged 66.

John T. Anglin, Dover, Okla.; University of the South Medical Department, Sewanee, Tenn., 1900; served as president of the Kingfisher County Medical Society; died in the General Hospital, Enid, July 4, aged 70, of arteriosclerosis.

Harriet D. Covert Battles, St. Petersburg, Fla.; Toledo Medical College, 1900; died May 4, aged 87, of acute dilatation of the heart.

Charles Franklin Kingsbury Bean ✦ Medford, Mass.; Harvard Medical School, Boston, 1912; past president of the Medford Medical Society and the Rotary Club; for many years affiliated with Lawrence Memorial Hospital; died July 23, aged 61, of hypertensive heart disease.

Norbert George Benesh, Minneapolis; University of Nebraska College of Medicine, Omaha, 1931; member of the American Medical Association; on the staff of the Lutheran Deaconess Home and Hospital; died June 28, aged 39, of coronary disease.

Harry Applebee Cheney, Campton, N. H.; University of Vermont College of Medicine, Burlington, 1894; member of the American Medical Association; served on the staff of the Sceva Speare Memorial Hospital, where he died July 15, aged 76, of carcinoma of the prostate.

Cyrus Eben Coffee ✦ St. Louis; St. Louis University School of Medicine, 1911; affiliated with the Christian Hospital; died in the Barnes Hospital August 9, aged 69, of coronary thrombosis.

Victor C. Eddy ✦ Colby, Kan.; the Hahnemann Medical College and Hospital, Chicago, 1884; served as county health officer; on the staff of St. Thomas Hospital, where he died August 9, aged 85, of pneumonia.

Robert Donald Ferguson ✦ Ocala, Fla.; Tulane University of Louisiana School of Medicine, New Orleans, 1915; formerly vice president of the Florida Medical Association and member of the committee on venereal disease control; served overseas during World War I; died in the Municipal Hospital, Tampa, July 26, aged 55, of hypertensive heart disease.

Ben Bigelow Fisher, Wild Rose, Wis.; Wisconsin College of Physicians and Surgeons, Milwaukee, 1898; died June 11, aged 77, of cerebral thrombosis and hypertension.

Hugh Vincent Foley, Troy, N. Y.; Albany (N. Y.) Medical College, 1913; member of the American Medical Association; past president of the Rensselaer County Medical Society; died July 16, aged 59, of arteriosclerotic heart disease and nephritis.

Victor Ethel Fox, Tomnolen, Miss.; Memphis (Tenn.) Hospital Medical College, 1913; died August 12, aged 60, of heart disease.

Ephraim D. Friedrichs ✦ New Orleans; Medical Department of Tulane University of Louisiana, New Orleans, 1900; died June 10, aged 70, of pneumonia following a fractured hip received in an accident.

Max M. Gara, New York Mills, N. Y.; Medizinische Fakultät der Universität, Wien, Austria, 1920; died June 30, aged 55, of coronary infarction and hypertension.

Harry Goldberg, Baltimore; Maryland Medical College, Baltimore, 1907; died June 23, aged 62, of brain tumor.

John Clifford Hancock ✦ Dubuque, Iowa; Harvard Medical School, Boston, 1898; fellow of the American College of Surgeons; on the staffs of Finley and St. Joseph Mercy hospitals; died June 18, aged 75, of chronic myocarditis.

Benjamin George Haumesser, St. Louis; St. Louis University School of Medicine, 1919; died July 26, aged 53, of cirrhosis of the liver.

John Paul Keating ✠ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1927; served during World War I; member of the staffs of Fitzgerald-Mercy Hospital in Darby and Misericordia Hospital; died July 17, aged 50, of acute coronary thrombosis.

Adam J. Knapp, Evansville, Ind.; University of Tennessee Medical Department, Nashville, 1893; died July 9, aged 93, of cerebral hemorrhage.

George Koeppel, Milwaukee; Illinois Medical College, Chicago, 1899; retired public school principal; died July 31, aged 87, of myocardial degeneration.

Harry Marcus Loewenstein ✠ St. Louis; Washington University School of Medicine, St. Louis, 1902; for many years on the staff of the Missouri Baptist Hospital, where he died August 6, aged 69, of multiple sclerosis.

Lorenzo Peyton McCuistion ✠ Paris, Texas; Kentucky School of Medicine, Louisville, 1889; fellow of the American College of Surgeons; selected as the 1931 recipient of a certificate of distinction awarded annually by the Winfield F. Brown post of the American Legion at Paris to a distinguished citizen of the town; physician in charge of the Sanitarium of Paris, where he died July 16, aged 77, of cardiac failure and myasthenia gravis.

Earle McCormick McLean ✠ Bradford, Pa.; Jefferson Medical College of Philadelphia, 1904; past president of the McKean County Medical Society; served during World War I; on the staff of the Bradford Hospital, where he died August 3, aged 66, of sarcoma.

Angeline Martine ✠ La Jolla, Calif.; Woman's Medical College of Pennsylvania, Philadelphia, 1892; at one time practiced in Utica, N. Y., where she was a member of the board of education and on the staff of St. Luke's Hospital; on the staff of Scripps Memorial Hospital, where she died July 17, aged 80, of cerebral hemorrhage.

Robert J. Nelson, Robersonville, N. C.; Louisville (Ky.) Medical College, 1890; member of the American Medical Association; died July 24, aged 83, of arteriosclerosis and cerebral hemorrhage.

David Joseph O'Connor, Croghan, N. Y.; University of Toronto Faculty of Medicine, Toronto, Canada, 1930; member of the American Medical Association; health officer since 1938; died July 15, aged 41, of an injury to the head received in a fall down the stairs.

John Panos ✠ Dayton, Ohio; Eclectic Medical College, Cincinnati, 1925; died recently, aged 54.

Jesse Henley Phillips, Montezuma, Iowa; the Hahnemann Medical College and Hospital, Chicago, 1897; member of the American Medical Association; died July 30, aged 96, of senility.

Walter Ashby Plecker, Richmond, Va.; University of Maryland School of Medicine, 1885; member of the American Medical Association; joined the bureau of vital statistics of the state department of health in 1912, serving as director until he resigned in 1946; died in the Hospital Division of the Medical College of Virginia August 2, aged 86, of injuries received when he was struck by an automobile while crossing the street.

George Louis Preston, Canisteo, N. Y.; Eclectic Medical College of the City of New York, 1882; for many years health officer, county coroner and school physician; on the staff of Bethesda Hospital in Hornell; died August 2, aged 86, of acute dilatation of the heart.

Elum M. Russell, Salida, Colo.; Chattanooga (Tenn.) Medical College, 1899; at one time a resident of Gunnison, where he served as physician at Western State College; died August 7, aged 75, of myocarditis.

William Stephen Schuler, Chicago; Jenner Medical College, Chicago, 1905; member of the American Medical Association; on the staff of the Swedish Covenant Hospital; died August 24, aged 74, of cerebral hemorrhage.

Lloyd S. Settle, Mount Washington, Ky.; University of Louisville (Ky.) Medical Department, 1895; died August 11, aged 87, of uremia.

Guy Otey Shirey, Williams, Ariz.; University of Tennessee College of Medicine, Memphis, 1914; served during World War I; accompanied Admiral Richard E. Byrd to the South Pole on the second Antarctic Expedition; formerly district surgeon for the Southern Pacific Railroad, serving on the staff of Southern Pacific Hospital in Tucson; died in Fort Whipple June 30, aged 56, of cirrhosis of the liver.

Vladimir Nicholas Sikorsky, North Grafton, Mass. (licensed in New Hampshire in 1897); member of the American Medical Association and the New Hampshire Medical Society; died in St. Vincent's Hospital, Worcester, August 1, aged 80, of arteriosclerotic heart disease.

William Ebert Simon ✠ Alva, Okla.; University of Kansas School of Medicine, Kansas City, 1913; served during World War I; died in the Alva General Hospital July 19, aged 60.

Jefferson B. Simons, Buckhannon, W. Va.; Eclectic Medical Institute, Cincinnati, 1899; died July 25, aged 73, of heart disease.

Alexander Lorne Smith, Jersey City, N. J.; Queens University Faculty of Medicine, Kingston, Ontario, Canada, 1902; served in France as a captain in the medical corps of the U. S. Army during World War I; died July 1, aged 68, of cerebral thrombosis.

James Frederick Stafford, Lovilia, Iowa; Jefferson Medical College of Philadelphia, 1906; member of the American Medical Association; died July 5, aged 66, of coronary thrombosis.

Eugene W. Stevens, Onalaska, Wash.; Marion-Sims College of Medicine, St. Louis, 1893; member of the American Medical Association; served on the staff of St. Helen's Hospital in Chehalis; died in Chehalis June 27, aged 76, of carcinoma.

Joseph Alfred Stoner, York, Pa.; University of the City of New York Medical Department, 1886; died June 28, aged 85, of osteoarthritis of the lumbar spine.

Edward Francis Sullivan ✠ Staunton, Ill.; St. Louis University School of Medicine, 1924; died August 1, aged 51, of coronary thrombosis.

Hugh H. Tabor, Weir, Miss.; Mississippi Medical College, Meridian, 1910; died June 10, aged 66, of heart disease.

William Francis Traughber, Lancaster, Calif.; College of Physicians and Surgeons, Los Angeles, 1911; died in July, aged 72, of cerebral hemorrhage.

Irving Emanuel Uram, Philadelphia; Jefferson Medical College of Philadelphia, 1942; member of the American Medical Association; interned at the Jefferson Medical College Hospital and served a residency at Philadelphia General Hospital; found dead near Thornhurst August 13, aged 30, following an airplane crash.

Algernon Stubblefield Vaiden, Monterey, Va.; University of Virginia Department of Medicine, Charlottesville, 1910; died August 1, aged 60, of heart disease.

Frederick Eugene Vest ✠ Topeka, Kan.; State University of Iowa College of Medicine, Iowa City, 1885; Jefferson Medical College of Philadelphia, 1887; on the staff of Stormont Hospital; died in Kansas City, Kan., August 4, aged 88, of congestive heart failure.

Wilson Davenport Webb ✠ Hackensack, N. J.; University of Buffalo School of Medicine, 1913; fellow of the American College of Surgeons; affiliated with the Hackensack Hospital; died August 6, aged 58, of cerebral hemorrhage.

Robert W. White, Youngstown, Ohio; Western Reserve University Medical Department, Cleveland, 1897; died July 23, aged 82, of coronary thrombosis.

Joseph Herbert Willis ✠ Evansville, Ind.; Hospital College of Medicine, Louisville, Ky., 1897; fellow of the American College of Surgeons; on the staffs of the Deaconess and St. Mary's hospitals; died August 6, aged 75, of heart disease.

Arthur Lee Wilson, Lynchburg, Va.; Bellevue Hospital Medical College, New York, 1898; member of the American Medical Association; served during World War I; formerly president of the board of health and member of the city council; died August 4, aged 72, of cerebral hemorrhage.

Edwin Barnes Wilson ✠ Brooklyn; Albany Medical College, 1905; for many years on the staffs of the Coney Island, Caledonian and St. Mary's hospitals; died August 3, aged 69, of cerebral hemorrhage.

John Thomas Winn, Cullman, Ala.; University of Tennessee Medical Department, Nashville, 1893; died in the Cullman Hospital August 4, aged 81, of chronic endocarditis with cardiac hypertrophy.

John Magee Wise ✠ Watertown, Mass.; University of Buffalo School of Medicine, 1907; at one time superintendent of the New Hampshire State Sanatorium in Glencliff and the Sassaquin Sanatorium in New Bedford; formerly affiliated with the Middlesex County Sanatorium in Waltham; died August 7, aged 71, of coronary heart disease.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Sept. 27, 1947.

Congress of the International Society of Surgery

The twelfth congress of the International Society of Surgery was held in London, with the president, Dr. Leopold Mayer, of Brussels, Belgium, presiding. About one hundred members, including seventy official delegates from national committees of more than forty countries attended. The congress of the society had been held only once previously in London, in 1923. The president delivered an address, partly in French, partly in English, in which he recalled some of the famous members of the society: Emil Theodor Kocher would always be associated with the treatment of goiter; Czerny, of Heidelberg, Germany, would ever be famous for his researches on cancer, and Lucas-Championniere, of Paris, France, was immortalized by his work on orthopedic surgery. His own master, Antoine Depage, of Brussels, Belgium, showed organizing powers and military foresight equalled only by his surgical skill. The treatises of William Keen of Philadelphia on surgical technic are still referred to. Others mentioned were Macewen, of Glasgow, Scotland; Giordano, of Venice, Italy; Hartmann, of Paris, and Matas, of New Orleans. It was fitting that the country so valiantly led by Churchill should witness the first postwar international congress of surgery.

I. Penicillin in Surgery

At the first scientific session Sir Alexander Fleming discussed penicillin in surgery. He largely repeated what he said at the International Conference of Physicians. As the drug does not affect all microbes, the infecting organism must be susceptible to it. The dose must be adequate. There is now a tendency to higher dosage since correction of the original scarcity of penicillin. The drug must be administered so that it reaches the organisms. Intermittent injection is customary and there is evidence that it is not necessary to maintain a constantly high bacteriostatic level of the antibiotic in the blood. Ten minutes after injection a maximum concentration in the blood occurs; advantage can be taken of this in prophylactic use in extraction of septic teeth in rheumatic fever. Duration of treatment is important. While gonorrhea can be cured by one dose, subacute endocarditis may require treatment for months. Local treatment has definite possibilities. Pure penicillin can be injected into the theca in high concentrations without local irritation. Subconjunctival injections give high concentrations in the eye.

Professor Walters, of the Mayo Clinic, said that before the advent of penicillin staphylococcic septicemia carried a mortality of over 90 per cent in patients over 40 years of age. Sulfonamide drugs reduced the mortality to 40 per cent. With penicillin it is well under 20 per cent. The effectiveness of the drug in pyogenic meningitis and abscess of the brain is remarkable. In thoracic surgery 50,000 units in 50 cc. of isotonic sodium chloride solution have proved of immense value against empyema. In postoperative pneumonias it has been outstandingly effective.

II. Vascular Surgery

An ovation was given to Professor Blalock, Johns Hopkins Hospital, for the presentation of his operation for congenital pulmonary stenosis. Until 1938 satisfactory treatment for any form of congenital heart disease was lacking. Since then an advance has been made in each of the major groups, patent ductus arteriosus, coarctation and pulmonary stenosis. The object of his operation was to perform anastomosis of a vessel of the general circulation with high pressure to one of the pulmonary arteries with low pressure. On the right side the innominate, carotid or subclavian artery and on the left, the subclavian artery or possibly the aorta could be used. The object was to connect the systemic and pulmonary circulations. He usually performed end to side and occasionally an end to end anastomosis. Dr. Blalock showed a motion picture of the entire operation, ligation of the azygos vein, division of the mediastinal pleura, exposure of the right pulmonary artery, exposure of the innominate artery under the superior vena cava and anastomosis between the end of the subclavian artery and the side of the pulmonary artery. A fortnight after operation cyanosis had usually disappeared. Disappearance of clubbing of the fingers usually occurred later. In 474 cases there had been 86 deaths, but 18 fatalities followed operations in which it had been impossible to find a pulmonary artery. Among the last 38 successive cases there had been no deaths. Most of the patients who survived the operation had improved. Some who could walk only a few steps before now could walk miles. He showed 2 patients, a girl aged 3 and a boy aged 9, who had recently undergone this operation. They appeared to be normal children.

III. Social Functions

The president and council of the Royal College of Surgeons entertained representatives of most of the nations taking part in the congress at dinner. Professor G. Grey Turner led delegates and members on a pilgrimage of homage to places in London associated with John Hunter and Joseph Lister. Hunter's famous house in Leicester Square was visited first, then the church of St. Martin's in the Fields, where Hunter was originally buried. After sixty years his remains were removed at the expense of the Royal College of Surgeons to Westminster Abbey. The Abbey and the College, which has the marble statue of Hunter by Henry Weekes, were visited. Here the portrait of Lister by Ouless was displayed, as well as various pictures and instruments having an association with Hunter.

Lister's house and his statue in Portland Place were also visited and lastly University College, where exactly one hundred years ago Lister received his bachelor of arts degree.

IV. American Surgeons Honored; Gift to the Royal College of Surgeons

At a special ceremony five American surgeons were made honorary fellows of the Royal College of Surgeons, one was presented with the Honorary Medal of the College and another with the Lister Medal.

Sir Alfred Webb-Johnson, the president, said that the records of those it was proposed to honor were a reminder of many great achievements in the United States and Canada. The first recipient of the honorary fellowship was Dr. Arthur W. Allen, president of the American College of Surgeons. He was introduced by Sir Heneage Ogilvie, who said that Dr. Allen had made contributions of lasting importance to gastric surgery. Dr. Irvin Abell, of Kentucky, past president of the American College of Surgeons, Dr. Frank Howard Lahey, Dr. Dallas B. Phemister, president-elect, and Dr. Alfred Blalock were the other recipients. The Honorary Medal of the College was presented to Dr. William E. Gallie, past president of the American College of Surgeons, and the Lister Medal to Dr. Evarts A. Graham.

The American surgeons then presented a beautiful oak table and lectern, which Dr. Allen described "as a token of high esteem and undying friendship."

V. The Next Congress and President

Professor G. Grey Turner was elected president of the next congress, which is provisionally set for October 1949 at New Orleans.

ITALY

(From Our Regular Correspondent)

FLORENCE, Aug. 30, 1947.

Association for the Study of Allergy

The first scientific meeting of the Italian Association for the Study of Allergy was held in Milan. Professor Amilcare Zironi was chairman and Professor Sangiorgi, whose initiative and activity was instrumental in the establishment of the association, acted as secretary. Professor Zironi announced that the invitation to join the International Association for Allergists had been officially accepted.

Professor Guido Melli reported on antihistaminic compounds in the treatment of allergic diseases; he reported the results obtained with nicotinamide and with two recent antihistaminic compounds, "antergan" (dimethylamino - ethyl - benzylamine) and "antistin" (2-(N-phenyl-N-benzyl-aminomethyl)-imidazolin. The definitely different therapeutic behavior and the different degree of biologic activity are responsible for the statement that nicotinamide works by another mechanism, although it possesses an antihistaminic activity. The speaker did not obtain immediate results with nicotinamide, but a protracted course of treatment yielded relatively favorable, permanent results in bronchial asthma and serum disease, both prophylactically and therapeutically. The results were doubtful in hemicrania. The treatment was practically ineffective in urticaria and in exudative eczema.

The results with the two other compounds experimented with were on the contrary obtained rapidly but were often only transitory. Good results were obtained in pruritus, in urticaria, sometimes in hemicrania and in exudative eczema. Results were negative in bronchial asthma, in serum disease, in 2 cases of acute articular rheumatism and in 1 case of erythema nodosum. The speaker considered it peculiar that bronchial asthma, the most typical allergic disease, proved completely refractory to this method of treatment and that favorable results were likewise obtained only occasionally by other authors. Professor Melli stated that this behavior may be explained by the fact that allergy may not be considered as a pathogenic factor in all cases of asthma.

Professor Piero Redaelli reported on morphologic manifestations of gastric allergy in describing 1 case of lead poisoning with nephritis and severe hypertension in a man aged 53; death resulted from cerebral hemorrhage. Necropsy revealed that the gastric mucosa, at the level of the pyloric antrum toward the lesser curvature, presented three elevated patches, each with a diameter of 1 cm., while the corresponding mucosa was curved like a watchglass and was pale. Microscopic examination revealed a circumscribed serous imbibition of the mucosa corresponding with a small inflammatory infection of the submucosa manifested by some polymorphonuclears and by monocytic elements which were accumulated in small congested blood vessels. Professor Redaelli emphasized that this change is something more important than a simple elevated patch; it may be interpreted as equivalent to a local anaphylactic process of Arthus' type, analogous to the well known manifestations of gastric allergy, such as urticaria, or Quincke's edema, which many times has been demonstrated clinically but very seldom pathologically.

Dr. Mario Staffieri stated that many times he has been able to observe factors of specific allergic sensibilization in patients who presented acute catarrhal manifestations of the middle ear. In 1 patient an endotympanic transudate and signs of auricular pain arose unexpectedly after the allergogenic stimulus of some intensely positive cutaneous tests. Also, in some cases in which the diagnosis of chronic catarrhal otitis media was made the auricular lesions were due to the acute endotympanic hydrops which, following the allergic stimuli, may recur and become chronic with the ensuing organization of the transudate. Other aspects of disturbances of the middle ear may be attributed to an allergic mechanism by interpreting them as complications of an allergy of the upper portion of the respiratory tract and sometimes as a manifestation of an allergic-hyperergic reaction localized in the middle ear. In those cases one has to deal with endotympanic transudates following an allergy to food or to inhaled agents; or tubal stenoses, depending on nasopharyngeal allergies; or tubal otorrhea in infants with exudative diathesis, with alimentary intolerance or with intestinal parasites depending on an allergizing action.

The papers presented at this meeting and those which will be presented at coming meetings will be published in the *Quaderni della allergia*, which will soon resume publication as the official bulletin of the Italian Association for the Study of Allergy.

PARIS

(From Our Regular Correspondent)

Sept. 15, 1947.

International Union Against Tuberculosis

The Council of the International Union Against Tuberculosis, whose secretary general is Professor Fernand Bezancon, met in Paris on July 28-29, with Professor Lopo de Carvalho in the chair. Twenty-five nations were represented at this meeting: Austria, Belgium, Canada, Cuba, Czechoslovakia, Denmark, Finland, France, Great Britain, Greece, Hungary, India, Ireland, Italy, Luxemburg, the Netherlands, New Zealand, Norway, Poland, Portugal, Sweden, Switzerland, the United States, Uruguary and Yugoslavia.

Delegates from the United States included Dr. Kendall Emerson, Dr. Corwin Hinshaw, Dr. Herman E. Hilleboe, Dr. Esmond Long and Mr. F. D. Hopkins; from France, Professor Fernand Bezancon, Professor Etienne Bernard, Dr. Guerin, Dr. Rist and Dr. Poix (representing Dr. Bariety); from Great Britain, Drs. A. Morland, F. R. C. Heaf, Lloyd Rusby, R. R. Trail and Harley Williams.

The council decided that the closest cooperation is to be kept up with the World Health Organization; that the proposed modifications of the by-laws of the Union be examined and discussed. The constitution of the executive committee is to be altered, so that it should include, as well as existing members, delegates from South America, Canada, Denmark, India, Norway and Soviet Union.

The first scientific session, at the Laënnec Hospital, was devoted to the report by Professor Etienne Bernard on streptomycin. From a wholly objective point of view and with the help of excellent pictures, the speaker described the cures he had obtained and the negative results he had observed. This report was followed by a discussion in which the following members took part: Dr. Mollaret, Dr. Derscheid, Dr. Andre, Professor Omodei Zorini, Professor V. Fici and Dr. Yevrem Nedelkowitch.

During the second scientific session, at the great amphitheater of the Pasteur Institute, under the presidency of Professor Trefouel, director of the Pasteur Institute, Dr. Corwin Hinshaw described the research which he and Dr. Feldman accomplished on streptomycin, the clinical results they obtained, the hopes which could be entertained and the precautions which should be taken. The next conference of the Union is to be summoned in Copenhagen, Denmark, in 1950.

Correspondence

DOCTORS DISTINGUISHED AS SCIENTISTS

To the Editor:—Many doctors have done such excellent scientific research that they have been widely recognized as distinguished scientists. William James became America's most distinguished psychologist, David Starr Jordan one of the greatest zoologists, Samuel W. Williston an outstanding paleontologist, Asa Gray the most distinguished botanist of his period, Hrdlička one of the great anthropologists.

Among scientists sketched in the biographic directory, "American Men of Science," seven editions, 1906-1944, are some three hundred and fifty M.D.s starred as especially distinguished in research by secret vote of their fellow scientists.

Six anatomists had their undergraduate training at Harvard, 6 at Toronto, 5 at Michigan, 4 at Hopkins, 4 at Yale, 3 at Pennsylvania, and 2 each at Brown, Chicago, Cornell, Kansas, Missouri, Princeton and Washington (St. Louis). Teachers listed as especially stimulating by the anatomists who filled out the 1946 questionnaire were S. H. Gage (Cornell), F. P. Mall (Hopkins), C. M. Jackson (Harvard) and J. B. MacCallum (Hopkins).

Twenty pathologists had their undergraduate training at Harvard, 14 at Yale, 6 at Hopkins, 5 at Princeton, 4 at Michigan and 3 each at Amherst, Columbia, Massachusetts Institute of Technology and Toronto. Teachers reported as especially stimulating were W. H. Welch, W. H. Howell, J. B. MacCallum and William Osler (all at Hopkins).

Of the physiologists, Harvard gave college degrees to 12, Hopkins and Yale to 7, Chicago and Michigan to 6, Columbia and Wisconsin to 4, Illinois, Kansas and Pennsylvania to 3. Physiology teachers listed as especially stimulating were A. J. Carlson (Chicago), W. B. Cannon (Harvard), Jacques Loeb (Columbia), L. B. Mendel (Yale) and J. J. Abel (Hopkins).

Doctoral Training

Anatomists.—Hopkins conferred doctorates on 17 of the subsequently starred anatomists, Harvard on 9, Columbia on 7, Chicago and Michigan on 6, Brown, Pennsylvania and Yale on 3. Notably prominent in the graduate training of anatomists were F. P. Mall (Hopkins), R. R. Bensley (Chicago) and C. S. Minot (Harvard).

Pathologists.—Harvard with 30, Hopkins with 31, Columbia with 23 and Pennsylvania with 17 were the leading universities in the doctoral training of pathologists. No other school graduated more than 5. Graduating 4 or 5 were Bellevue, Chicago, Maryland, Michigan, Rush, Yale and McGill. Relatively important teachers in the doctoral training of pathologists were W. H. Welch, W. S. Halsted, W. H. Howell, W. G. MacCallum and William Osler (all at Hopkins) and G. H. Parker at Harvard.

Physiologists.—In the doctoral training of physiologists the early leader was Hopkins, by a wide margin; for those starred 1909-1943, Chicago led, with Harvard close behind. The totals for all periods were Hopkins 23, Chicago 14, Columbia 10, Harvard 10, Pennsylvania 8, Yale 7 and Michigan 6. Persons that were apparently relatively significant in the graduate training of physiologists were A. J. Carlson (Chicago), W. B. Cannon (Harvard), B. H. Chittenden and L. B. Mendel (Yale), J. Loeb (Columbia), J. J. Abel, F. P. Mall and E. V. McCollum (Hopkins) and G. Lusk (Cornell).

Birthplaces

Anatomists.—Of the 11 foreign-born starred anatomists, 6 were Canadians, 2 British, 1 Czechoslovak and 1 Scandinavian. Of those born in the United States, the Middle Atlantic States (New York, Pennsylvania and New Jersey) yielded 20, New England 15, the East North Central States 12, the West North Central States 14 and the rest of the country only 10.

Pathologists.—Of the 25 foreign-born pathologists, Canada yielded 8, Britain 4, Germany 3, Russia 3, Austria, France and Switzerland 2 each and Asia 1. In proportion to the number of immigrants in the United States from those countries, the yield was highest from Switzerland, Austria, Russia and Canada. Of those born in the United States, the Middle Atlantic States yielded 45, the East North Central States 32, New England 31, the South Atlantic States and the West North Central States each 10, the South Central 9 and the West 3.

Physiologists.—Of the 26 foreign-born physiologists, Canada and Britain each yielded 6, Germany 4, Austria and Russia 2, the Netherlands, Scandinavia, Spain, Switzerland, Africa and Asia each 1. In proportion to the number of immigrants, Austria, Canada, the Netherlands and Switzerland led, with about 1 per 100,000; Britain and Russia did half as well; Germany, one fifth. Of those born in the United States, the East North Central States led with 27, followed by the Middle Atlantic States 23, West North Central States 14, New England States 12, South Atlantic States 10 and the rest 9.

The available information indicates that about a quarter of these distinguished doctors were of Puritan ancestry, a fifth were of other English, about a sixth were Scotch, a sixth German and about 5 per cent each, Dutch and Scandinavian. About 5 per cent of the total were Jewish.

Professor Stephen S. Visher, Bloomington, Ind.

THE BOY SCOUT JAMBOREE

To the Editor:—The international Boy Scout Jamboree, held for this quadrennial at the quiet little village of Moisson, some 40 miles northwest of Paris, and opened officially on August 9, has just closed (August 18). Some 40,000 scouts attended, from many different countries. The meeting has proved highly successful and important from many social and international points of view.

Medical interest centers in the facilities organized to cope with surgical, medical and dental needs, mostly of emergency character. The chief in charge was Dr. Francis Lazard, who served in North Africa and Italy and on the southern and Atlantic coasts of France. The Moisson organization included 150 beds for medical cases distributed among three tents, 50 beds for surgery in two tents and two mobile dental units. Two operating rooms were provided and radiologic, laboratory and accessory facilities were available. The equipment was provided by the medical section of the French army. Twenty-five physicians and surgeons were allotted to the hospital service and 20 more were stationed at first aid points distributed throughout the camp.

Occasionally as many as 228 patients (mostly with sore throat) were hospitalized at once. The average number per day was stated as 2 cases. However, the most important service was surgical, the cases largely consisting of arm and leg fractures, mainly occasioned through accidents occurring on the belt-line train which circulated throughout and around the camp. There were a few cases of drowning, the camp lying close to a bend in the Seine, and the total mortality is reported at 6 cases.

These details reported were taken from a statement published in the *Jamboree France* of August 19 (the journal issued by the camp authorities and printed in several languages) and also from information supplied by a group of the Scouts.

This is scarcely the place for an essay on the moral, social and political influences which will emanate very fruitfully from this assembly of international youth, but at least its great importance may be briefly stressed, self evident as it is to any careful observer.

Theodore C. Merrill, M.D., Paris, France.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Boards in Specialties were published in THE JOURNAL, Oct. 25, page 533.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: *Examination.* Montgomery, June 22-24, 1948. Sec., Dr. D. G. Gill, 519 Dexter Ave., Montgomery 4.

ARKANSAS: * *Examination.* Texarkana, Nov. 6-7, 1947. Sec., L. J. Kosminsky, Texarkana. *Eclectic.* Little Rock, Nov. 6. Sec., Dr. Clarence H. Young, 1415 Main St., Little Rock.

CALIFORNIA: *Oral.* Los Angeles, Nov. 8-9. Sec., Dr. Frederick N. Scatena, 1020 N St., Sacramento 14.

COLORADO: * Denver, Jan. 6-9. Final date for filing application is Dec. 20. Sec., Dr. J. B. Davis, 831 Republic Bldg., Denver 2.

CONNECTICUT:* *Examination.* Hartford, Nov. 11-12. Sec., Dr. Creighton Barker, P. O. Box 1438, New Haven.

DELAWARE: *Examination.* Dover, Jan. 13-15. *Endorsement.* Dover, Jan. 20. Sec., Dr. J. S. McDaniel, 229 S. State St., Dover.

DISTRICT OF COLUMBIA: * *Examination.* Washington, Nov. 10-11. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6012 Municipal Bldg., Washington.

FLORIDA: * *Examination.* Jacksonville, Nov. 25-26. Sec., Dr. Harold D. Van Schaick, 6675 Windsor Lane, La Gorce Island, Miami.

HAWAII: *Examination.* Honolulu, Jan. 12-15, 1948. Sec., Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu, T. H.

IDAHO: Boise, Jan. 13-15. Sec., Miss Estella S. Mulliner, 355 State House, Boise.

INDIANA: *Examination.* Indianapolis, June 1948. Sec., Board of Medical Registration and Examination, Dr. Paul R. Tindall, K of P Bldg., Indianapolis.

KANSAS: Topeka, Dec. 3-4. Sec., Board of Medical Registration and Examination, Dr. J. F. Hassig, 905 N. 7th St., Kansas City.

MAINE: Portland, Nov. 12-13. Sec., Dr. A. P. Leighton, 192 State Street, Portland.

MARYLAND: *Medical Examination.* Baltimore, Dec. 9-12. Sec., Dr. Lewis P. Gundry, 1215 Cathedral St., Baltimore. *Homeopathic Examination.* Baltimore, Dec. 9-10. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

MASSACHUSETTS: *Examination.* Boston, Nov. 18-21. Sec., Dr. H. Q. Gallupe, 413-E State House, Boston.

MICHIGAN: * *Examination.* Lansing, Nov. 19-21. Sec., Board of Registration in Medicine, Dr. J. E. McIntyre, 100 W. Allegan St., Lansing 8.

MISSISSIPPI: *Endorsement.* Jackson, Dec. 1947. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson.

NEBRASKA: * *Examination.* Omaha, Dec. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln.

NEVADA: Carson City, Nov. 3. Sec., Dr. G. H. Ross, 215 N. Carson St., Carson City.

NEW HAMPSHIRE: *Examination.* Concord, March 11-12. Sec., Board of Registration in Medicine, Dr. John S. Wheeler, 107 State House, Concord.

NEW YORK: *Examination.* Albany, Buffalo, New York, Syracuse, Feb. 16-19. Sec., Dr. J. L. Lochner, Jr., Education Bldg., Albany.

NORTH DAKOTA: Grand Forks, Jan. 6-9. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OHIO: *Examination.* Columbus, Dec. 2-4. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

PENNSYLVANIA: *Examination.* Harrisburg, Jan. 1948. Acting Sec., Board of Medical Education and Licensure, Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

SOUTH CAROLINA: Columbia, Nov. 10-12. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

SOUTH DAKOTA: * Pierre, Jan. 20. Sec., State Board of Health, Dr. Gilbert Cottam, Capitol Bldg., Pierre.

TEXAS: San Antonio, Nov. 12-14, 1947. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2.

UTAH: *Examination.* Salt Lake City, June, 1948. Asst. Dir., Department of Registration, Miss Rena B. Loomis, 324 State Capitol Bldg., Salt Lake City.

VIRGINIA: Richmond, Dec. 4-6. Sec., Dr. K. D. Graves, 30½ Franklin Rd., Roanoke.

WEST VIRGINIA: Charleston, Jan. 12-14. Comm., Public Health Council, Dr. N. H. Dyer, State Capitol, Charleston 5.

WYOMING: *Examination.* Cheyenne, Feb. 2. Sec., Dr. G. M. Anderson, Capitol Bldg., Cheyenne.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ARIZONA: Dec. 16. Sec., Mr. Francis A. Roy, Science Hall, University of Arizona, Tucson.

COLORADO: *Examination.* Denver, Dec. 17-18. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver.

IOWA: Des Moines, Jan. 13, April 13, July 13, Oct. 12. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

MICHIGAN: *Examination.* Ann Arbor and Detroit, Jan. 9-10. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

NEW MEXICO: *Examination.* Santa Fe, Nov. 2. Sec., Miss Marion M. Rhea, 114 E. Marcy, Santa Fe.

OKLAHOMA: Spring 1948. Sec., Dr. Frank Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

OREGON: *Examination.* Portland, Dec. 6. Admin., Mr. C. D. Byrne, Univ. of Oregon, Eugene.

SOUTH DAKOTA: Aberdeen, Dec. 5-6. Sec., Dr. G. M. Evans, Yankton.

WISCONSIN: *Examination.* Milwaukee, Dec. 6. Sec., Prof. W. H. Barber, Scott and Watson Sts., Ripon.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Photographs: Who Owns Negatives?—The plaintiff filed an action in replevin to recover the negatives of some photographs taken by the defendant, a professional photographer. From a judgment in favor of the plaintiff, the defendant appealed to the Supreme Court, Appellate Term, First Department, New York.

The question involved on this appeal, said the court, is whether, in the absence of an agreement on the subject, negatives belong to the customer or to the photographer. The photographs in question were taken for an agreed price, were delivered and the bill was paid. The plaintiff then demanded delivery of the negatives. Testimony was given that there was an established custom with reference to the retention of negatives; that "it has always been the custom for photographers to retain the negatives." There having been no agreement with respect to the negatives, it would seem that the custom and usage of the industry with respect thereto should prevail. The plaintiff urges, however, that it is established law that the customer has the right to the possession of the negatives. If that is so, any alleged custom or usage to the contrary would be ineffective. Research, said the court, has failed to disclose any case, in this jurisdiction at least, where the ownership of negatives was decided by the court in the absence of an agreement. It is true that the photographer's right to retain the negatives gives him no right to use them for any purpose whatsoever, except at the request of the customer. The photographer, for example, cannot sell the negatives or make photographs from them for any one except the customer. There is nothing inconsistent with proprietary rights in the customer and the holding that the custody of the plates should remain with the photographer. This view would seem to represent the expectations of the party in the absence of any special agreements to the contrary. There are indications in some of the decisions, although no definite adjudication on the subject, that the photographer has the right to retain the custody of the negative. For example, in a case decided in the federal court (*Corliss* v. *E. W. Walker Co.*, 64 F. 280) it was said, "When a person engages a photographer to take his picture, agreeing to pay so much for the copies which he desires, the transaction assumes the form of a contract; and it is a breach of contract, as well as a violation of confidence, for the photographer to make additional copies from the negatives. The negative may belong to the photographer, but the right to print additional copies is the right of the customer." And in an English case (*Pollard* v. *Photographic Co.* [1888], 40 Ch. Div. 345) the court said, "It may be said that in the present case the property in the glass negatives is in the defendant (photographer) and that he is only using his own property for a lawful purpose, but it is not a lawful purpose to employ it, either in breach of faith or in breach of contract."

In conclusion the court held that where a customer employed a photographer to make pictures of him, the photographer, in the absence of any agreement to the contrary, has the right to retain the negatives. He may not, however, make any use of the negatives without the permission of the customer. The judgment in favor of the plaintiff was therefore reversed.—*Hochstadter v. H. Tarr, Inc., 68 N. Y. S. (2d) 762 (New York, 1947).*

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted.

American Journal of Clinical Pathology, Baltimore

17:507-584 (July) 1947

Mucopolysaccharide Content of Skin in Localized (Pretibial) Myxedema. E. M. Watson and R. H. Pearce.—p. 507.
Progress in Cancer Research. W. M. Simpson.—p. 513.
Pathologist's Contribution to Clinical Interpretation of Disorders of the Newborn. Edith L. Potter.—p. 524.
*Serum Phosphatase and Other Tests of Liver Function in Infectious Mononucleosis. E. A. Gall.—p. 529.
Meningitis Caused by Friedlander's Bacillus or Aerobacter Aerogenes: Report of 2 Cases with Autopsies. P. T. Hough and L. Adelson. —p. 534.

Liver Function Tests in Infectious Mononucleosis.—According to Gall, enlargement of the liver, with or without jaundice, is often observed in infectious mononucleosis. The present study was carried out as the result of an accidental observation of an elevated serum phosphatase in a nonjaundiced patient with infectious mononucleosis. Subsequently, 33 patients with this disease were encountered and were investigated with a view to determining the frequency with which phosphatase alteration occurred in infectious mononucleosis. Icterus index, cephalin flocculation and thymol turbidity were also determined. All 34 patients exhibited the blood picture and other clinical manifestations of infectious mononucleosis and all but 1 had heterophil antibody titers of at least 1:112, a diagnostic level. Only 1 patient was frankly jaundiced, and 2 others exhibited a subicteric hue. Significantly elevated alkaline phosphatase, slightly increased icterus indexes and positive cephalin flocculation and thymol turbidity tests were found whether or not clinical jaundice was present. Alteration in liver function as manifested by these tests was present in almost all patients with infectious mononucleosis.

American J. Digestive Diseases, Fort Wayne, Ind.

14:215-244 (July) 1947

Prolapse of Redundant or Hypertrophied Gastric Mucosa. S. P. Bralow and M. Melamed.—p. 215.
*Perforation of Gall Bladder. S. Hyman and F. Steigmann.—p. 221.
Influence of an Antacid (Nonreactive Aluminum Hydroxide Gel) on Evacuation of Bowels and Fecal Column. A. X. Rossien and A. W. Victor.—p. 226.
Preparation and Nutritive Value of an Incomplete Acid Hydrolysate of Casein. M. Sahyun, C. F. Kade and J. Houston.—p. 230.
Some Considerations of the Possible Relationship of Cholesterol Metabolism to Peptic Ulcer. M. Hyman.—p. 235.
Epidemiology of a Food Poisoning Epidemic (Staphylococcus Enterotoxin). N. E. Reich.—p. 238.
Pruritus of the Perineum. M. Golob.—p. 240.

Perforation of Gallbladder.—Hyman and Steigmann state that postmortem material of biliary tract disease in the Cook County Hospital for the past thirteen years revealed 45 instances of perforation of the gallbladder. In only 10 of the 45 was some type of biliary tract trouble diagnosed prior to death. The correct diagnosis of perforation of the gallbladder was not made in a single instance prior to death. In the other 35 cases there was a variety of diagnoses, the commonest being intestinal obstruction and acute cholecystitis. There were 17 males. This comparatively high incidence of perforated gallbladder in the male is astonishing because of the general belief that disease of of the gallbladder is rare in the male. Over 90 per cent of the patients with perforation of the gallbladder had stones either in the gallbladder or the common duct and over 80 per cent had evidence of chronic cholecystitis. The reasons for delay in surgery in gallbladder disease are procrastination by patients, acquiescence in this by their physicians and uncertainty in the minds of some physicians as to the indications for surgery of the gallbladder.

American Journal of Hygiene, Baltimore

46:1-148 (July) 1947. Partial Index

Cultivation of Yellow Fever Virus. J. P. Fox.—p. 1.
Infections of Chicks with Single Parasites of Plasmodium Gallinaceum Brumpt. W. G. Downs.—p. 41.
Observations on Tsutsugamushi Disease (Mite-Borne or Scrub Typhus) in Northwest Honshu Island, Japan, in Fall of 1945. C. B. Philip. —p. 45.
Typhus at Belsen. I. Control of the Typhus Epidemic. W. A. Davis. —p. 66.
Studies in Human Malaria. G. R. Coatney, W. C. Cooper, M. D. Young and S. B. McLendon.—p. 84.

American Journal of Medicine, New York

3:129-258 (Aug.) 1947

*Intercapillary Glomerulosclerosis. L. L. Henderson, R. G. Sprague and H. P. Wagener.—p. 131.
Diabetes and Hypertension. E. Foldes.—p. 145.
Insulin Mixtures: Evaluation of Their Use in 150 Cases. W. S. Collens, L. C. Boas and J. D. Zilinsky.—p. 155.
Experience with Insulin Mixtures. L. J. Palmer and J. H. Crampton. —p. 167.
Myasthenia Gravis and Spontaneous Curarism: Lipidystrophy as Possible Cause. R. de Rohan Barondes.—p. 171.
Jejunal Syndrome. O. Porges.—p. 177.
Use of Injector Meter for Maintenance of Prescribed Oxygen Concentration and Elimination of Carbon Dioxide in Closed Head Tents. A. L. Barach, with technical assistance of Eva Levenson and C. C. Rumsey Jr.—p. 181.
Effect of Propylene Glycol on Antibiotic Activity of Human Serum. S. J. Prigal, T. H. McGavack and Mary Bell.—p. 185.
Management of Acute Toxic Nephrosis. V. H. Kugel.—p. 188.
*Enhancement of Penicillin Blood Levels in Man by Means of New Compound, Caronamide. C. C. Shaw, W. P. Boger, J. W. Crosson and others.—p. 206.

Intercapillary Glomerulosclerosis.—Henderson and his co-workers report 61 cases of intercapillary glomerulosclerosis in 313 cases of diabetes mellitus. In 30 patients hyalin-like, globular, deeply staining lesions like those originally described by Kimmelstiel and Wilson could be demonstrated and were classified as "advanced." In 31 patients small, deeply staining, club-shaped masses situated in the midst of a diffuse thickening along the axis of the lobule could be demonstrated; these lesions were classified as "early." That intercapillary glomerulosclerosis is not specific for diabetes mellitus at least morphologically is shown by the fact that among 81 cases of glomerulonephritis in nondiabetic patients there were 7 patients with early intercapillary glomerulosclerosis and 3 with advanced lesions. Seven cases with early lesions were observed among 134 cases in which the death of nondiabetic patients was due to hypertension and its complications. Severe lesions were by far the most frequent in diabetes. There were important differences in the clinical behavior in cases of diabetes mellitus and in those of glomerulonephritis in which intercapillary glomerulosclerosis was present. Intercapillary glomerulosclerosis may be considered as a slowly progressive process related to the duration of diabetes mellitus. The diagnosis of intercapillary glomerulosclerosis cannot be established with complete certainty during life, but the condition can be strongly suspected in patients who have diabetes mellitus of long standing associated with albuminuria, hypertension, renal insufficiency and mixed vascular and diabetic retinopathy. The more complex and advanced the retinopathy, the more likely is its association with intercapillary glomerulosclerosis.

Penicillin Blood Levels After Caronamide.—Shaw and his co-workers gave 100,000 units of penicillin and 2.0 Gm. of "staticin" (caronamide, 4'-carboxyphenylmethanesulfonanilide) by mouth every four hours to 6 afebrile patients for six consecutive days. Penicillin was given intramuscularly and caronamide by mouth to an additional 5 patients. The effect of caronamide by mouth on penicillin in beeswax-oil was studied in 3 patients. Each patient served as his own control. During the control phase of forty-eight hours, the patient received penicillin only. This was followed by a period during which the administration of penicillin was supplemented by oral administration of caronamide (the drug phase), followed by a third period when penicillin only was administered (the postdrug control phase). Caronamide inhibited the renal tubular excre-

tion of penicillin and thereby elevated the concentration of penicillin in the plasma from twofold to sevenfold after the oral and/or parenteral administration of penicillin. Caronamide produced no evidence of renal, bone marrow or hepatic impairment, dermatitis or drug fever. These preliminary clinical studies indicate that caronamide should be of definite value in the treatment of disease conditions in which high levels of penicillin in the blood are required.

American Journal of Physiology, Baltimore

150:1-228 (July) 1947. **Partial Index**

Oxygen Content of Arterial Blood in Dogs Breathing Air at Low Barometric Pressures. R. A. Miller, Beatrice S. Heagan and C. B. Taylor.—p. 1.
Circulatory and Cerebral Changes and Protective Aids During Exposure to Acceleratory Forces. S. W. Britton, V. A. Pertzoff, C. R. French and R. F. Kline.—p. 7.
Distribution of Total Electrolyte, Potassium and Sodium in Cerebral Cortex in Relation to Experimental Convulsions. H. F. Colfer and H. E. Essex.—p. 27.
Action of Adrenaline on Spinal Neurones Sensitized by Partial Isolation. G. W. Stavraky.—p. 37.
Stability of Prothrombin. A. G. Ware, M. M. Guest and W. H. Seegers.—p. 58.
Effect of Discontinuous Chronic Anoxia on Liver Glycogen Stores. O. E. Reynolds.—p. 65.
Pituitary and Ovarian Dysfunction in Experimental Diabetes. Elva G. Shipley and Katherine S. Danley.—p. 84.
Quantitative Study of Effect of Hyperthyroidism on Genital Structure and Function. K. M. Richter and C. A. Winter.—p. 95.
Acclimatization to Extreme Cold. S. M. Horvath, A. Freedman and H. Golden.—p. 99.
Fatigue of Standing. Eleanor M. Larsen.—p. 109.
Relations Between Cutaneous Blood Flow and Blood Content in Finger Pad, Forearm, and Forehead. A. B. Hertzman, W. C. Randall and K. E. Jochim.—p. 122.
Studies on Recurrence of Decompression Sickness on Re-Ascent to High Altitudes. S. Rodbard.—p. 133.
Effect of Oxygen, Altitude and Exercise on Breath Holding Time. S. Rodbard.—p. 142.
Effect of Stimulation of Carotid Sinus Region on Absorption of Chloride from Small Intestine. E. J. Van Liere, J. C. Stickney and D. W. Northup.—p. 149.
Size and Function of Human Heart at Rest in Semi-Starvation and in Subsequent Rehabilitation. A. Keys, A. Henschel and H. L. Taylor. —p. 153.
Plasma Volume and Thiocyanate Space in Famine Edema and Recovery. A. Henschel, O. Mickelsen, H. L. Taylor and A. Keys.—p. 170.
Renin Content of Renal Venous Blood of Normal and Hypertensive Patients at Rest. Florence W. Hayes, L. Dexter and R. E. Seibel. —p. 198.
Alveolar Aid During Simulated Flights to High Altitudes. H. Rahn and A. B. Otis.—p. 202.

Anesthesiology, New York

8:339-452 (July) 1947

Absorption of Carbon Dioxide from Anesthetic Atmospheres: Historical Aspects. R. M. Waters.—p. 339.
Curare and Curare-Like Compounds: Review. B. J. Robbins and J. S. Lundy.—p. 348.
Anesthesia: XXVII. Narcosis with Vinyl Chloride. R. H. Oster, C. J. Carr and J. C. Krantz Jr., with technical assistance of Mary J. Sauerwald.—p. 359.
Chloroform. H. W. Featherstone.—p. 362.
Method for Accurately Measuring Rate of Flow of Intravenous Fluids. D. J. Graubard, R. W. Robertazzi and M. C. Peterson.—p. 372.
Factors Affecting Pentothal Anesthesia in Dogs. B. de Boer.—p. 375.
Spinal Fluid Findings in Spinal Anesthesia. M. G. Black.—p. 382.
Examination of Local Anesthetic Action of Some Synthetic Sweet Substances and Other Phenyl Alkyl Derivatives. L. Vandam and A. Lamont.—p. 390.
Management of Anesthetized Patient. A. L. Schwartz and E. Rosenblum.—p. 395.

Archives of Otolaryngology, Chicago

46:1-124 (July) 1947

Deafness, Tinnitus, Vertigo and Neuralgia. D. J. Goodfriend.—p. 1.
Effect of Various Solutions of Penicillin Sodium and Penicillin Calcium on Respiratory Nasal Mucosa of Rabbits. N. D. Fabricant, A. R. Hollender and H. W. Anderson.—p. 36.
Spontaneous Cerebrospinal Rhinorrhea: Successful Surgical Treatment. J. G. Love and J. R. Gay.—p. 40.
*Massive Atelectasis Following Tonsillectomy Under Local Anesthesia: Report of Case. L. L. Sawyer.—p. 45.
*Sensitivity from Insufflation of Powdered Sulfonamide Compounds in Acute Infections of Nose and Throat. H. C. Ballenger.—p. 52.
Rubber Catheter Used to Maintain Patency of Ostium in Dacryocystorhinostomy: Preliminary Report. J. L. Goldman.—p. 58.
Tuberculosis. G. E. Wilson and W. K. Stern.—p. 73.

Atelectasis After Tonsillectomy.—Sawyer reports a case of atelectasis twenty-four hours after tonsillectomy under local anesthesia in a woman aged 25. There was an average amount of bleeding during the operation which was readily controlled without ligatures or stitches. The patient was an actress, high strung and nervous. She was given more than the average preoperative sedation. Despite this she did not sleep after the operation and was given 0.011 Gm. of "pantopon" (a mixture of hydrochlorides of opium alkaloids) three and a half hours postoperatively. Her sedation plus her fear of pain from coughing may have favored the inspiration of blood and saliva which acted as a nucleus. Bronchoscopy was performed and the right main bronchus was found to contain a bloody mucous plug which was aspirated. The patient showed considerable improvement immediately. She was discharged on the sixth postoperative day in good condition. Bronchoscopy with visual aspiration is one of the safest and best methods of treating collapse of the lung.

Insufflation of Sulfonamide Drugs.—Ballenger applied sulfathiazole, sulfanilamide and sulfadiazine powders, alone or in combination, by insufflation to the mucous membrane of the upper respiratory tract in 1,500 patients with various acute infections of the nose and throat. Six thousand applications were made during a three year period from July 1, 1943 to July 1, 1946. An average of about 2.5 treatments were given for each acute attack. Many of the patients have had two, three or more attacks during the three year period. The sore throat and inflammation, especially that of the palate, nasopharynx and pharynx, were frequently stopped within twenty-four hours. The rhinitis and the cough would continue to develop in many patients but not in as many as had been formerly observed. The numbers in whom sinusitis and the various forms of otitis developed were definitely lessened when compared with the numbers of patients not so treated in whom these complications appeared. The greatest value of the insufflation of the powdered sulfonamide compounds appeared to be in the first three or four days of the acute infection. Insufflation of the sulfonamide compounds proved to be as safe as their oral use. Only 7 out of the 1,500 treated gave evidence of sensitivity as manifested by dermatitis, hives or hay fever–like symptoms.

Bull. of U. S. Army Med. Dept., Washington, D. C.

7:655-738 (Aug.) 1947

Value of Physical Therapy in Internal Medicine. G. M. Piersol.—p. 674.
Studies on Pharmacology of Fluoroacetate: II. Action on Heart. M. B. Chenoweth and A. Gilman.—p. 687.
Artificial Respiration and the Pneumatic Balance Resuscitator. H. J. Jacobs.—p. 707.
Mediastinal Emphysema Secondary to Brachial Plexus Block. E. G. Dimond, B. Root and M. H. Delp.—p. 718.
Aerobacter Aerogenes Meningitis. C. L. Neill and H. E. Blechman. —p. 722.
Role of Research Psychologists in Military Service. A. C. Tucker. —p. 726.
Dissociated Peroneal Nerve Lesions. M. E. Pusitz and F. W. Lusignan. —p. 733.

California Medicine, San Francisco

67:69-152 (Aug.) 1947

Viral Hepatitis and Public Health. A. M. Snell.—p. 69.
Cyclodialysis, Multiple or Single, with Air Injection—Operative Technic for Chronic Glaucoma. O. Barkan.—p. 78.
*Treatment of Acute Hematogenous Osteomyelitis with Penicillin and Sulfonamides Combined. S. S. Mathews and C. G. Hutter Jr.—p. 84.
Quinidine in Heart Disease, Particularly in Older Age Groups. S. A. Weisman.—p. 87.
Pharmacology of New Drugs Useful in Pediatric Practice. C. H. Thienes.—p. 90.
Vector Potentialities with Respect to Spread of Insect Borne Diseases of Man in California. W. B. Herms.—p. 95.
Relation of Deep Roentgen Therapy to Aero-Otitis Media. Francis O'N. Morris.—p. 100.
Urachal Cysts with Malignant Invasion of Bladder: Three Case Reports. R. J. Prentiss.—p. 103.
*Asphyxial Death Due to Pulmonary Cryptococcosis: Case Report. A. M. Moody.—p. 105.

Penicillin and Sulfonamide Drugs in Acute Hematogenous Osteomyelitis.—Mathews and Hutter present a comparative study of the effectiveness of the sulfonamide compounds alone and of the sulfonamide compounds and penicillin combined in the treatment of 25 cases of hematogenous Staphylococcus aureus osteomyelitis at the Children's Hospital, Los Angeles. The expected mortality rate of penicillin-treated cases of osteomyelitis should be less than 1 per cent; the course of the disease is considerably shortened; the roentgenograms reveal less destruction in these cases and the necessity for surgical inter-

vention and drainage of bone abscesses has been reduced. The authors stress the importance of repeated hemoglobin determinations, red blood cell counts, white blood cell counts and differential counts, urine examinations and blood cultures. Transfusions of 150 to 200 cc. should be given daily or at least once a week, depending on the hemoglobin content. Penicillin should be administered by the intravenous route in doses of 400,000 units daily for the first two days, then in somewhat smaller dosage. Sulfadiazine should be given in amounts to maintain a blood level of about 12 mg. per hundred cubic centimeters of blood. A high dosage may be necessary to secure this blood level. Positive fluid balance with adequate output of urine should be insured by intravenous administration of fluids if necessary. The affected parts should be immobilized and a diet high in vitamins should be provided.

Asphyxial Death Due to Pulmonary Cryptococcosis.—Moody reports the case of a Mexican laborer, aged 38, who was admitted with the probable diagnosis of pulmonary tuberculosis, submiliary type. His chief complaint was shortness of breath of fifteen days' duration. He had lost 13 pounds (5.9 Kg.) in weight during the preceding two months, had started coughing one month before entry and had been bringing up a mucoid sputum with the cough. Three examinations of sputum were made for tubercle bacilli and none was found. Roentgenoscopy suggested a submiliary lesion, possibly tuberculous, and pleuritis with adhesions and fluid at the base of the right lung. Later, obstruction of a major bronchus or a tracheal obstruction was suspected. Bronchoscopic examination disclosed a fungating tumor mass below the larynx. Treatment was largely symptomatic. The patient died on March 24, although nearly 1,000,000 units of penicillin and 390 grains (23.4 Gm.) of sulfadiazine had been given. Sections of cystlike masses and smears of the mucinous material from the bronchi contained many encapsulated organisms characteristic of Cryptococcus neoformans (Torula histolytica). There were additional lesions of cryptococcosis in sections from several different areas of each lung. Areas of silicosis were also demonstrated in sections, but no tuberculosis was found. The organisms (C. neoformans) were numerous and easily demonstrated by direct wet smears mixed with a small amount of india ink. The mucinous capsules of the organisms with their included centrally located yeastlike bodies could be clearly seen.

Connecticut State Medical Journal, Hartford

11:597-712 (Aug.) 1947

Surgical Treatment of Thrombosis in Arteries and Veins of Lower Limbs. J. Homans.—p. 597.
Therapeutic Use and Hazards of Bed Rest. W. Dock.—p. 606.
Early Ambulation in Conjunction with Use of Metallic Suture. J. D. Booth.—p. 609.
Early Ambulation. C. D. Deming.—p. 611.
Early Postoperative Recovery in Suprapubic Prostatectomy. H. A. Levin. —p. 613.
Microcephaly in Three Successive Pregnancies. L. Newton and T. S. McLean Jr.—p. 617.
Minute Nodules and Cysts of a Fallopian Tube: Case Report. M. R. Moore.—p. 619.
Libel Suits of the American Medical Association. M. Fishbein.—p. 621.

Diseases of Chest, Chicago

8:295-422 (July-Aug.) 1947

*Inhalation Therapy in Chronic Bronchial Infections. E. R. Levine. —p. 295.
Routine Chest Roentgenograms of Hospital Admissions. G. N. Scatchard and Diana O. Duszynski.—p. 312.
*Surgical Treatment of Bronchial Adenoma. A. Goldman.—p. 321.
Histoplasmosis—Pathologic and Clinical Findings. J. F. Kuzma.—p. 338.
Critical Study of Pneumoperitoneum and Phrenic Nerve Crush in Pulmonary Tuberculosis. A. Hurst, H. M. Maier and R. Dwork.—p. 345.
Patent Ductus Arteriosus; Present Surgical Status. J. W. Nixon. —p. 360.
Hazards of Bovine Tuberculosis as Matter of Public Health Significance and Potential Human Lung Infections with Bovine Tubercle Bacilli. H. M. O'Rear.—p. 368.

Inhalation Therapy.—Levine treated 42 patients, 26 men and 16 women, of the average age of 50 years, with inhalation of a nebulized solution of penicillin for chronic bronchial infection. The following criteria were used in selection of cases: (*a*) definite bronchographic evidence of bronchiectasis; (*b*) a history which is definitely of this type of infection for a long period of time; (*c*) previous treatment of all the patients by all other methods, including rest in bed, postural drainage, sulfonamide drugs by mouth and penicillin by injection. All of the patients have been followed for at least one year. Symptoms disappeared completely in 19 of the 42 patients; 14 patients showed pronounced improvement in symptoms and general condition and 9 did not present any clinical improvement. Recurrence of symptoms with an entirely new bacterial flora suggesting a new infection was the rule rather than exception. The sensitivity of the organism to penicillin was the more important factor in the determination of the result. The concentration of penicillin per cubic centimeter in the nebulized solution did not appear to be an important factor per se. Inhalation therapy has a definite value in the treatment of bronchial infection while continued medical supervision and customary treatment, including postural drainage, remains an essential element.

Treatment of Bronchial Adenoma.—Bronchial adenoma, according to Goldman, is a slowly growing epithelial tumor which is locally invasive, clinically benign, but apparently capable in rare instances of becoming malignant. According to this concept, patients with bronchial adenoma between the ages of 24 and 48 were treated with pulmonary resection. There was 1 surgical death from infection. Results were satisfactory in the remaining 9 cases and were superior to bronchoscopic removal in treatment of patients with bronchoscopically inaccessible and large tumors, with recurrent tumors following bronchoscopic removal, with distal pulmonary suppuration and with involved mediastinal lymph nodes. No metastases have occurred in any of these 9 patients, although in 3 the tumor was left in the pulmonary stump without apparent spread. With modern preoperative and postoperative care, intratracheal anesthesia and surgical technic for conservation of the upper lobe applicable to adenomas located in a stem bronchus and accomplished by combining lobectomy with bronchotomy, pulmonary resection is the method of choice for the treatment of benign tumors of the lung.

Geriatrics, Minneapolis

2:197-260 (July-Aug.) 1947

Significant Objectives in Management of Cardiac Failure in Elderly Patients. M. M. Odel.—p. 197.
Preclinical Medicine and Geriatrics. M. W. Thewlis.—p. 205.
Nutrition in Cardiovascular Disease. D. C. Peete.—p. 213.
Geriatrics Contacts Old Age Assistance. E. L. Tuohy.—p. 222.
*Geriatrics—Epilepsy in Old Age. Madelaine R. Brown.—p. 231.
Allergy Problems in Elderly Persons. A. M. Fuchs.—p. 235.

Epilepsy in Old Age.—According to Brown epilepsy is thought to be an inherent, inherited abnormality of the nerve cells of the brain or paroxysmal cerebral dysrhythmia. In the absence of cerebral injury, it would seem unlikely that the onset of cerebral dysrhythmia in the aged would be due to age alone. The case histories of the 2 patients presented here would seem to bear this out. One of the patients was a woman, aged 61, and the other was a man, aged 71 when the seizures started. Each had a sibling who had epilepsy. Neither of the patients had retinal arteriosclerosis, hypertension, glandular dysfunction or Stokes-Adams disease. In both patients recent memory had been poor since the onset of convulsions. There were no abnormal neurologic signs or psychotic behavior. The electroencephalogram of 1 patient was normal and that of the other was abnormal only after hyperventilation. The symptoms of idiopathic epilepsy may begin at any age. The probable cause lies in an inherent dysrhythmia of the cerebral nerve cells.

Journal of Gerontology, Springfield, Ill.

2:93-204 (April) 1947

Older People and Their Potentialities for Gainful Employment. N. W. Shock.—p. 93.
Story of Old Age. F. Hinman.—p. 103.
Effect of Age on the Concentration of Chloride and Water in Chick Tissues. J. S. Barlow, J. S. Slinger and J. F. Manery.—p. 110.
Effects of Androsterone, Estradiol, and Thyroid Hormone on Artificial Premature "Climacteric" of Pure Gonadal Origin Produced by Ovariectomy in Rats: III. Effects on Histologic Structure of Vagina, Uterus, Adrenals, and Thyroid. V. Korenchevsky and V. E. Jones. —p. 116.
St. Augustine on the Longevity of the Antediluvians. J. J. Griffin. —p. 137.
Changing Trends in the Care of the Aged. J. Weil.—p. 148.

Journal of International College of Surgeons, Chicago

10:263-358 (May-June) 1947

International Nomenclature and Classification of Neoplasms. W. C. MacCarty.—p. 263.
Supradiaphragmatic Diverticulum of Esophagus Treated by Infradiaphragmatic Diverticulogastrostomy. R. W. McNealy and J. A. Glassman.—p. 268.
Simple Operative Procedure for Relief of Anginal Pain—New Technic. R. M. Klemme.—p. 272.
Massive Bone Defects in Compound Wounds. J. R. Moore.—p. 274.
Enterogenous Cysts with Report of Case Involving Transverse Colon. C. C. McCormick.—p. 287.
Adamantinoma of the Tibia. W. H. Meffley and S. W. Northup.—p. 291.
Cholecystocholedochostomy for Preserving a Functioning Gallbladder. B. O. C. Pribram.—p. 294.
Significance of Multiple Hernias in Inguinofemoral Region. G. E. Perrigard.—p. 301.
Pyloric Obstruction Due to Stenosing Ulcer in the Aged. S. J. Carnazzo.—p. 304.
Anatomy and Embryology of Anus in Relation to Pelvic Floor. C. W. Barrett.—p. 308.
Active Treatment of Acute Thrombophlebitis of Varicose Veins. E. J. Orbach.—p. 318.
Hypernephroma of Thyroid Gland: Case Report. C. E. Boys.—p. 323.
Electrosurgical Therapy of Rectal and Rectosigmoid Cancer without Preliminary Colostomy. H. Bacon.—p. 341.
Cancer and Experimentation. R. C. Ferrari.—p. 347.
Evipal Soluble (Barbital Derivative) in Intravenous General Anesthesia in Children's Traumatology. J. de Romaña and G. Bacigalupo.—p. 350.
Senile Cataract; Statistics on Last 100 Cases. E. Cipriani.—p. 352.

Journal of Lab. and Clinical Medicine, St. Louis

32:807-928 (July) 1947

*Enhancement of Blood Levels by Caronamide During Intramuscular Administration of Penicillin. A. O. Seeler, Clare Wilcox and M. Finland.—p. 807.
*Enhancement of Plasma Penicillin Concentrations by Caronamide and Sodium Benzoate. E. Strauss, P. L. Richburg, P. Z. Saba and E. Alexander.—p. 818.
Water-Soluble Preparation for Prolonging Effective Penicillin Levels in Body Fluids. L. Loewe, H. B. Eiber, Erna Alture-Werber and Mary K. Shore.—p. 832.
Use of Modified Dubos and Davis Medium for Demonstration of Antibiotic Activity of Subtilin Against Mycobacterium Tuberculosis. S. C. Wong, A. S. Hambly Jr. and H. H. Anderson.—p. 837.
Further Observations on Cultivation of Tubercle Bacilli From Pathologic Material in Dubos Media. G. E. Foley.—p. 842.
Discrepancies in Agglutination Test for Brucellosis as Performed with Various Antigens and Reported from Different Laboratories. C. W. Eisele, N. B. McCullough and Grace A. Beal.—p. 847.
Human Brucella Melitensis Infections in Minnesota with Hogs as Probable Source. P. Kabler, H. Bauer and C. B. Nelson.—p. 854.
Diffraction Method of Measuring Red Blood Cells. A. Pijper.—p. 857.
Role of Phagocytosis in Resistance, as Related to Age of Granulocytes Following Primary and Reinfection Studies with Hemolytic Streptococci in Macacus Rhesus. S. Saslaw and C. A. Doan.—p. 878.
Outbreak of Diarrheal Disease Associated with Paracolon. H. F. R. Plass.—p. 886.
Effect of Rate of Administration of Amino Acid Preparations and Blood Amino Acid Nitrogen Level on Production of Nausea and Vomiting. C. J. Smyth, A. G. Lasichak and S. Levey.—p. 889.
Study of New Sedative Hypnotic Drug (3,3-Diethyl-2,4-Dioxotetrahydropyridine). S. C. Freed.—p. 895.

Enhancement of Blood Levels of Penicillin by Caronamide.—Beyer reported that the excretion of penicillin could be inhibited by 4′-carboxyphenylmethanesulfonanilide, a compound called caronamide. Seeler and his co-workers administered caronamide orally to patients over 60 years of age in doses of 2 Gm. every four hours and noted an enhancement of the plasma penicillin levels resulting from the intramuscular administration of 100,000 units of penicillin every eight hours. It was necessary to increase the caronamide dosage to 4 Gm. every four hours to produce a similar effect in younger persons. The penicillin blood levels following intramuscular administration of 100,000 units of penicillin every eight hours to patients receiving approximately minimal effective oral doses of caronamide were significantly higher than those obtained by giving 300,000 units of penicillin alone to similar subjects.

Caronamide and Sodium Benzoate for Enhancement of Penicillin Concentrations.—Strauss and his co-workers studied the effectiveness of caronamide (4′-carboxyphenylmethanesulfonanilide) in enhancing the plasma penicillin concentration in 35 adult subjects. The effect was compared with that of sodium benzoate. The only toxic effects of caronamide were nausea and mild diarrhea in a few persons. When 100,000 units of penicillin were given by mouth concurrently with caronamide, a twofold or greater increase in plasma penicillin concentrations were observed in 80 per cent of the blood samples and a fourfold or greater increase in 40 per cent of the samples. This enhancement of the plasma penicillin concentration was maintained for two hours but not for three hours after each dose of penicillin. The concurrent oral administration of caronamide in subjects who received 25,000 and 50,000 units of penicillin intramuscularly likewise resulted in twofold to eightfold increases in plasma penicillin concentrations in most instances. The effects of caronamide were variable when penicillin was injected in peanut oil and beeswax, but plasma penicillin concentrations were in the majority of instances increased. Caronamide had no effect on the plasma concentration of streptomycin when the latter substance was administered in multiple intramuscular injections. In general sodium benzoate was as effective as caronamide in increasing plasma penicillin concentrations when penicillin was given by mouth or by intramuscular injection. The ingestion of both sodium benzoate and caronamide by subjects receiving penicillin by mouth resulted in a greater enhancement of plasma penicillin concentration than was effected by either of these agents alone.

Journal of Mount Sinai Hospital, New York

14:71-132 (July-Aug.) 1947

The Artificial Kidney. W. J. Kolff.—p. 71.
Advances in Knowledge of Vitamins. C. R. Cowgill.—p. 80.
Fenestration for Otosclerosis. S. Rosen.—p. 98.
Parahypophyseal Embryonal Residues: Brief Note. P. F. L. Becker.—p. 104.
Venous Thrombosis and Peripheral Pulmonary Embolization. I. Diagnosis of Venous Thrombosis in Lower Extremities: Introduction. H. Neuhof.—p. 110.
Essays on Biology of Disease. E. Moschcowitz.—p. 122.

Journal of Nat. Cancer Inst., Washington, D. C.

7:425-466 (June) 1947

Characterization of Tissue Metabolism of Transplanted Mouse Melanomas by High Oxidative Response to Paraphenylenediamine. D. Burk, G. H. Algire, Marie L. Hesselbach, Clara E. Fischer and Frances Y. Legallais.—p. 425.
Further Studies on Response of Strain A Female Mice to Small Amounts of *o*-Aminoazotoluene. H. B. Andervont.—p. 431.
Acceleration of Enzymatic Desamidation of Glutamine by Several Inorganic Anions. C. E. Carter and J. P. Greenstein.—p. 433.
Effects of Acidity and of Heating on Capacity of Rat Liver Extracts to Desamidate Glutamine and Asparagine. M. Errera and J. P. Greenstein.—p. 437.
Enzymatic Hydrolysis of Acetyldehydroalanine. J. M. Goncalves, V. E. Price and J. P. Greenstein.—p. 443.
Studies on Agent of Chicken Tumor I. I. Relative Potencies of Serial Extracts and Comparative Values as Source Materials for Purification Studies. W. R. Bryan, V. T. Riley, D. G. Deihl and Virginia Voorhees.—p. 447.
Effect of Castration and Sex Hormones on Induction of Tumors in Mice with *o*-Aminoazotoluene. H. B. Andervont and Thelma B. Dunn.—p. 455.
Relationship Between Lethal Yellow (A^y) Gene of Mouse and Susceptibility to Spontaneous Pulmonary Tumors. W. E. Heston and Margaret K. Deringer.—p. 463.

Journal of Neurosurgery, Springfield, Ill.

4:299-402 (July) 1947

*Replacement of Free Bone Plates in Routine Craniotomies. B. S. Ray and H. Parsons.—p. 299.
*Ectopic Pinealomas in Chiasmal Region: Report of 3 Cases. G. Horrax and J. P. Wyatt.—p. 309.
Parasagittal Meningiomas. H. Olivecrona.—p. 327.
Hemifacial Spasm: Note on Etiology in Two Cases. E. Campbell and C. Keedy.—p. 342.
Some Additional Electroencephalographic Technics for Localization of Intracranial Lesions. B. K. Bagchi and R. C. Bassett.—p. 348.
Convulsive Effects of Streptomycin Topically Applied to Cerebral Cortex. H. M. Suckle, R. R. Liebenow and O. S. Orth.—p. 370.

Replacement of Free Bone Plates in Craniotomies.—Ray and Parsons think that the routine use of free bone plates, completely separated from dura, pericranium and muscle, and their replacement in the ordinary craniotomy have not been thoroughly evaluated. They began several years ago to replace revised free bone plates in cases in which the skull was involved by tumors such as osteomas and meningiomas and in which discarded bone would have left unsightly defects. They draw the following conclusions from the study of 100 consecutive cases in which there has been immediate or delayed replacement of untreated or boiled cranial bone plates: 1. The use of free bone plates in routine craniotomies has technical advantages over the use of the classical osteoplastic flap. 2. The survival of the free bone plate that is normal and immediately replaced com-

pares favorably with that of the bone in the osteoplastic flap. 3. There is no greater incidence of infection than in the osteoplastic flap. 4. Postoperative bleeding from the bone plate is eliminated. 5. Boiling the bone plate does not significantly increase its tendency to atrophy provided that it is replaced immediately. 6. The delayed replacement of boiled bone should be avoided, since it is accompanied by an increased tendency for wound infection and atrophy of the bone. 7. Tumor tissue in the bone plate can be killed by boiling but plates extensively invaded by tumor do not survive well when boiled and replaced.

Ectopic Pinealomas in Chiasmal Region.—Horrax and Wyatt report 3 cases of so-called ectopic pinealomas in the chiasmal region. All 3 patients were Jewish boys between 12 and 19 years of age. In 2 of the patients a primary pinealoma in the pineal region was present and verified microscopically. In 1 of these patients the chiasmal growth was shown to have come by direct extension from the pineal tumor through the wall of the third ventricle; in the other, such an extension was presumed but could not be verified. In the third patient there has never been any clinical evidence of a primary tumor in the pineal region. In 2 of the patients diabetes insipidus was the outstanding clinical complaint. The chiasmal tumor was removed radically at operation in 2 instances, and 1 patient is alive and well after four and one-half years. In view of Dorothy Russell's thesis that ectopic pinealomas are in reality teratomas, serial studies on the material available were carried out in these 3 cases, but in only 1 was there any suggestion of a teratomatous origin, and here the visual proof was not conclusive. The other 2 cases are classical pinealomas from the histologic aspect, with the first case showing regional spread to the pituitary and hypothalamic regions.

Journal of Pediatrics, St. Louis

31:131-250 (Aug.) 1947

Ulcerated Urethral Meatus in Male Children. P. Freud.—p. 131.
Sex Precocity and the Adrenogenital Syndrome. B. Bergman.—p. 142.
Serum Precipitable Iodines in Recognition of Cretinism and in Control of Thyroid Medication. E. B. Man, C. S. Culotta, Dorothy A. Siegfried and C. Stilson.—p. 154.
Determination of Status and Progress in Children with Nutritive Failure. A. W. Mann, S. Dreizen and T. D. Spies.—p. 161.
Further Observations on Post-Tracheotomy, Mediastinal Emphysema, and Pneumothorax. G. B. Forbes, G. Salmon and J. C. Herweg.—p. 172.
A Study of the Absorption and Excretion of Oral Penicillin in Children. M. Markowitz and A. G. Kuttner.—p. 195.
Self-Demand Feeding and Indulgence in Early Infancy. G. F. Weinfeld.—p. 203.
Method of Holding the Head for Scalp Vein Transfusions and Restraining the Legs for Intravenous Therapy. P. H. Spohn and T. Statten.—p. 207.

Kansas Medical Society Journal, Topeka

48:309-352 (July) 1947

Irritable Bowel Syndrome. P. W. Brown.—p. 309.
Diagnosis and Management of Early Simple Glaucoma. S. J. Meyer.—p. 312.
Management of Tinea Capitis. W. H. Fritzemeier.—p. 317.

48:353-392 (Aug.) 1947

Changing Concepts in Medicine and Effect upon Medical Education. K. Menninger.—p. 353.
Congenital Absence of the Fibula. C. B. Trees.—p. 355.
Clinical Manifestations of Carcinoma of the Pancreas: Review of Literature and Review of 16 Cases. F. A. Rieke.—p. 359.

Kentucky Medical Journal, Bowling Green

45:217-262 (July) 1947

Meningococcal Infections. C. A. Fish.—p. 220.
Intravenous Anesthesia with Pentothal Sodium. E. H. Baker.—p. 227.
Obesity: Causes, Effects, and Clinical Management. R. H. Barr.—p. 231.
Symposium on Rheumatic Diseases
Rheumatic Diseases, Etiologic Aspects. M. H. Thompson.—p. 236.
Rheumatic Diseases, Diagnostic Aspects. G. S. Buttorff.—p. 242.
Therapeutic Considerations of the Rheumatic Diseases. A. C. McCarty.—p. 246.

45:263-296 (Aug.) 1947

Less Painful Hemorrhoidectomy. D. M. Clardy.—p. 274.
Changing Trends in Surgical Treatment of Peptic Ulcer. C. C. Johnston.—p. 277.
The Mahaffey Family. L. H. South.—p. 281.
Modern Treatment of Diabetes Mellitus. C. Morse.—p. 285.
Rectal Foreign Bodies: Unusual Case Report of Foreign Body in Rectum and Sigmoid. M. A. Lucas and J. E. Ryan.—p. 289.

Minnesota Medicine, St. Paul

30:729-759 (July) 1947

*Acute Poliomyelitis in Pregnancy: Report of 30 Cases. M. E. Baker and Ilene Godfrey Baker.—p. 729.
Review of 174 Cases of Cancer with Necropsies. H. H. Joffe and A. H. Wells.—p. 735.
General Principles in the Treatment of Peptic Ulcer. J. M. Ryan.—p. 742.
*Congenital Diaphragm of Duodenum: Case Report with Preoperative X-Ray Studies. W. I. Nelson.—p. 745.
Minnesota Multiphasic Personality Inventory: Evaluation of its Use in Private Practice. A. E. Walch and R. A. Schneider.—p. 753.
Reconstruction of the Extrahepatic Bile Duct: Modification of the Allen Method. C. E. Rea.—p. 759.

Acute Poliomyelitis in Pregnancy.—The Bakers say that during the Minnesota poliomyelitis epidemic in the summer of 1946, 695 patients with acute poliomyelitis were admitted to the Minneapolis General Hospital. Of this group, 115 were women of child-bearing age, 30 of whom were pregnant. The ages of the pregnant women varied between 17 and 32 years. Stages of gestation at the time of admission varied between six weeks and nine lunar months. Fifteen live babies had been delivered by March 15, 1947. Seven spontaneous abortions and 6 deaths occurred among the 30 pregnant patients. The authors conclude that poliomyelitis occurs in the pregnant woman more frequently than can be attributed to mere chance. In general pregnancy has little influence on the course of poliomyelitis or the extent of paralysis. There is a relatively high percentage of abortion (30.4 per cent) among pregnant patients with poliomyelitis. This study produced no evidence to show that the fetus can or cannot contract poliomyelitis in utero.

Congenital Diaphragm of Duodenum.—According to Nelson congenital diaphragm of the duodenum is a developmental anomaly in which a membrane formed by an infolding of the mucosa and submucosa extends across the lumen of the duodenum. The diaphragm may be complete or it may present an aperture. Cases of a duodenal diaphragm without an aperture are instances of congenital high intestinal obstruction. Unless the obstructions are recognized and successfully operated on, the infants die during the first few days of life. Those with small apertures in the diaphragm may have no symptoms, but they are potential candidates for complete obstruction. Nelson found 35 cases of congenital diaphragm of the duodenum reported in the literature, only 6 of which were recognized during life; of these, 5 were cured. He reports the case of a woman aged 26 in whom roentgenologic studies permitted the preoperative diagnosis. The patient was cured by resection of the duodenal diaphragm. Dilatation of the proximal duodenum demonstrable by roentgen ray has been reported in this condition by others. The roentgenograms of the author's case showed clearly a congenital diaphragm forming a sacculation within the duodenum. Duodenotomy and excision of the membrane is advocated rather than short-circuiting procedures.

New England Journal of Medicine, Boston

237:111-140 (July 24) 1947

*Recurrent Cancer of the Colon and Rectum: Report of Cases with Favorable Results Following Radical Surgery. J. E. Dunphy.—p. 111.
*Infectious Hepatitis Associated with Pregnancy: Report of Four Cases. R. Martin and F. C. Ferguson Jr.—p. 114.
Meckel's Diverticulum: Report of 2 Unusual Cases. W. R. Moses.—p. 118.
Electroencephalograms in Neuropsychiatric Disorders Among Soldiers: Results in 950 Cases. M. H. Kibbe.—p. 122.
Endoscopy. E. B. Benedict.—p. 126.
Pulmonary Emboli, Multiple, Old and Fresh Infarcts of Lung.—p. 132.
Mesenteric-Artery Embolism.—p. 135.

Radical Surgery in Recurrent Cancer of Colon.—Dunphy maintains that since surgical intervention is the only way to treat cancer of the colon initially, it should be employed whenever possible in dealing with recurrences. If there is no positive evidence of distant metastases or generalized peritoneal seeding, reoperation should be considered regardless of the extent of the first operation, the histologic character of the growth or the apparent fixation of the recurrence. He reports 4 cases selected as examples of what may be accomplished by a second attempt at extirpation of carcinomas of the colon and rectum that have recurred locally. Gratifyingly long periods of arrest may follow such operations.

Infectious Hepatitis Associated with Pregnancy.—According to Martin and Ferguson an epidemic of infectious hepatitis began among the civilian population of Portland, Maine, during 1944 and has continued to date. Four cases occurred in pregnant women. No definite conclusions can be drawn from this small series. The danger of maternal death from hepatitis is small. The chance of an uneventful pregnancy is poor, and there is a possibility of prolonged jaundice and perhaps permanent hepatic damage in the mother. Improvement in the mother occurred soon after the cesarean section in case 1 and soon after delivery in case 2. It appears that the mother benefits from removal of the fetus. Pregnancy itself may place an extra strain on an already diseased liver. Interruption of the pregnancy should be seriously considered in severe cases of hepatitis unless the patient improves rapidly under observation. Little other treatment will benefit, since treatment in infectious hepatitis has always been purely symptomatic.

New Orleans Medical and Surgical Journal

100:1-52 (July) 1947

Determination of Serum and Urine Salicyl Levels During Treatment with Salicyl Drugs. J. T. Peters.—p. 1.
Sternal Marrow in Health and Disease. P. Pizzolato.—p. 3.
"Borrowing-Lending" Hemodynamic Phenomenon (Hemometakinesia) and Its Therapeutic Application in Peripheral Vascular Disturbances. T. Ray, G. E. Burch and M. E. DeBakey.—p. 6.
Treatment of Uterine Prolapse. R. A. Kimbrough.—p. 16.
Sigmoid Sinus Thrombosis: Report of Case. J. B. Farrior and W. W. Hart.—p. 20.
Facial Nerve Paralysis Resulting from Fracture of Temporal Bone: Report of Case. J. B. Farrior and P. C. Caldwell.—p. 23.
Survey of General and Ovarian Sterility with Special Reference to Anovulation. S. B. Stickney.—p. 26.

Occupational Medicine, Chicago

3:435-530 (May) 1947

Health Education in Industrial Health. B. Gebhard.—p. 435.
Industrial Selenosis: Review of the Literature, Report of 5 Cases and a General Bibliography. R. F. Buchan.—p. 439.
Schedule Losses and Listed Disabilities: Plea for Revision of Compensation Laws. S. Kahn.—p. 457.
Industrial Medicine in Japan. J. S. Felton.—p. 465.
Fractures of Foot. J. S. Barr.—p. 497.
Rehabilitation of Amputee. H. H. Kessler.—p. 502.

Physiological Reviews, Baltimore

27:335-510 (July) 1947

Biologic Significance of Hyaluronic Acid and Hyaluronidase. K. Meyer.—p. 335.
*Pathogenetic Factors and Pathologic Consequences of Decompression Sickness. H. R. Catchpole and I. Gersh.—p. 360.
Genesis of Electrocardiogram. L. N. Katz.—p. 398.
Intercellular Cement and Capillary Permeability. R. Chambers and B. W. Zweifach.—p. 436.
Physiologic Effects of Curare and Their Application to Clinical Medicine. A. R. McIntyre.—p. 464.
Urinary Coproporphyrines in Health and Disease. C. J. Watson and E. A. Larson.—p. 478.

Decompression Sickness.—Catchpole and Gersh demonstrate that the evidence is overwhelming that gas bubbles are the primary pathogenetic agent in decompression sickness. Whether they occur after decompression from high pressure atmospheres or to altitude, gas bubbles are chiefly intravascular and are held to be responsible for nearly all important phases of the syndrome of decompression sickness. Extravascular gas bubbles occur also in certain severe instances of decompression from high pressure atmospheres, but they are restricted to certain lipid-rich structures. The pathologic effects may be vastly greater after decompression from high pressure atmospheres than to altitude.

Tennessee State Medical Assn. Journal, Nashville

40:241-278 (Aug.) 1947

Surgical Treatment of Localized Epilepsy. C. Pilcher.—p. 241.
Training for Registered Practical Nurses. W. A. Seeley.—p. 245.
Clinical Aspects of Rh Factor. D. C. Seward.—p. 247.
Most Advanced Phases in Treatment and Especially Diagnosis of Tuberculosis. J. B. Naive.—p. 253.
Pulmonary Moniliasis Treated with Penicillin. B. M. Zussman.—p. 258.
Unique Heart Tetralogy with Palindromic Rheumatism. D. Scheinberg.—p. 260.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Edinburgh Medical Journal

54:269-332 (June) 1947

Growth in Relation to Maturity. R. W. B. Ellis.—p. 269.
Chemotherapy of Benign Tertian Malaria. J. Innes.—p. 284.
Use of Ergot for Induction of Labor and for Third Stage of Labor. W. D. A. Callam.—p. 296.
Blood Changes in the Aged. O. Olbrich.—p. 306.
Bronchial Occlusion in Childhood Tuberculosis: Pathogenesis and Effects. J. H. Hutchison.—p. 322.

Jour. Obst. & Gynaec. of Brit. Empire, Manchester

54:281-416 (June) 1947

Relation Between Results of ABO and Rh Tests and Clinical Condition of 2,000 Mothers and Infants. Kathleen E. Boorman, Doreen Daley and Barbara E. Dodd.—p. 281.
Studies in Prematurity, Stillbirth and Neonatal Death: Part. I. Factors Affecting Birth-Weight and Outcome. Cecil Mary Drillien.—p. 300.
Influence of Semen on Female Reproductive Organs. V. B. Green-Armytage, F. Silberstein and G. E. Wachtel.—p. 324.
Rh Factor in Obstetrics. A. Sadowsky, A. Brzezinski and Z. Polishuk.—p. 340.
Cause of Polar Lie. F. Stabler.—p. 345.
Central Rupture of the Perineum: Report of a Case with Review of Literature. Josephine Barnes.—p. 351.
Rupture of Rectus Abdominis Muscle During Pregnancy. G. S. Adam.—p. 358.
Uncommon Sequel of Secondary Rupture of Uterus. W. F. Flint.—p. 363.
Effect of Estrogen (Stilbestrol) on Formed Elements of Blood in Women. K. J. Karnaky.—p. 366.
Familial Incidence of Adrenal Hypertrophy and Female Pseudohermaphroditism. Rosemary Biggs and Elizabeth Rose.—p. 369.
*Fatal Case of Primary Diphtheria of the Cervix and Urethra. Janet Bottomley and D. R. Christie.—p. 375.
Hematometra Caused by Disappearance of the Cervial Canal After Labour. H. S. Allen.—p. 377.
Fetal Brain Tumour as Cause of Dystocia. J. Baxter.—p. 380.
A Case of Serous Adenofibroma of Ovary. A. Sharman and A. M. Sutherland.—p. 382.

Fatal Case of Primary Diphtheria of Cervix and Urethra.—Bottomley and Christie report the case of a woman who two days before admission to the hospital had an illness of influenza type, with a temperature of 104 F. Her last menstrual period began eight days before admission and had been normal until the onset of her illness. She was tender in both iliac fossae. Bacteriologic examination revealed Corynebacterium diphtheriae mitis in cervix and urethra. Antidiphtheritic serum was started, as well as intramuscular administration of penicillin, but polyneuritis and myocarditis were evidently already present when treatment was started. After treatment, clearance swabs from the cervix were negative, but the patient's general condition deteriorated. The myocarditis progressed. The patient had a vagal block attack and died. At the time of the diagnosis of diphtheria the patient was questioned as to possible contacts. She stated that her betrothed had shared a cell with a man who had diphtheria. The route of infection in a primary case of genital diphtheria is a matter for speculation, but it appears possible that it may sometimes be transmitted by sexual intercourse.

Journal of Physiology, Cambridge

106:237-377 (July 31) 1947. **Partial Index**

*Creatinine Losses in Sweat During Work in Hot Humid Environments. W. S. S. Ladell.—p. 237.
Reflex Vasodilatation in Human Skeletal Muscle in Response to Heating the Body. H. Barcroft, W. McK. Bonnar and O. G. Edholm.—p. 271.
Survival of Transplanted Embryo Bone Grafted to Chorioallantoic Membrane, and Subsequent Osteogenesis. N. M. Hancox.—p. 279.
Mechanical and Structural Properties of Bone in Rats on a Rachitogenic Diet. G. H. Bell, J. W. Chambers and I. M. Dawson.—p. 286.
Normal Visual (Rod) Field of the Dark-Adapted Eye. Ida Mann and F. W. Sharpley.—p. 301.
Membrane Resistance of a Non-Medullated Nerve Fibre. A. L. Hodgkin.—p. 305.
Effect of Change of Brightness Level upon the Foveal Luminosity Curve Measured with Small Fields. L. C. Thomson.—p. 368.

Creatinine Losses in Hot Humid Environments.—Ladell found that whereas the creatinine contents of both the saliva and the blood increase threefold after a dose of 5 Gm. of creatinine, there is only a slight increase in the creatinine content of the

sweat. The creatinine of the sweat appears to be more closely linked with the rate of sweating than with the level of creatinine in the blood; thus the slower the rate of sweating the greater the creatinine content. This reciprocal relationship between creatinine content and sweat rate is the opposite of what has been observed for chloride concentration. There appear to be two mechanisms involved in the production of sweat from body fluids. Mosher's suggestion that there is an essential similarity between sweat and urine may be correct, but the fact that the creatinine content of the sweat is little affected by that of the blood, whereas the urinary creatinine is greatly affected, indicates that the production of the two fluids must be different.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

91:1685-1764 (June 28) 1947. **Partial Index**

Albright's Disease (Osteitis Fibrosa Cystica). F. E. Revers.—p. 1695.
*Reduction of Serum Potassium Content with Manifestations of Generalized Muscular Weakness and a Cardiovascular Syndrome During Treatment of Diabetic Coma. M. Frenkel, J. Groen and A. F. Willebrands.—p. 1704.
*Mud Fever. J. H. Bekker and T. S. J. A. Bonga.—p. 1713.

Reduction of Serum Potassium Content with Generalized Muscular Weakness During Diabetic Coma.—While treating a patient with severe diabetic coma with large quantities of insulin, water, dextrose, sodium chloride and sodium bicarbonate, Frenkel and his associates observed muscular weakness, partial respiratory paralysis, water hammer pulse with irregular rhythm, increased pulse pressure, cardiac dilatation with a systolic murmur and increased venous pressure. The serum potassium level, which had been normal on admission, decreased to 6.9 mg. per hundred cubic centimeters. The symptoms disappeared after administration of potassium. The authors consider this syndrome an expression of general muscular insufficiency as a result of potassium depletion. They discuss the mechanism which causes this decrease in serum potassium and emphasize the importance of recognizing this dangerous condition in the treatment of diabetic coma.

Mud Fever.—Bekker and Bonga review the history of mud fever in the Netherlands and report clinical histories of 2 farmers who contracted this form of leptospirosis. It was found that the burrowing mice (voles) which infested the ground on the farms were infected with Leptospira grippotyphosa.

Nordisk Medicin, Gothenburg

34:1241-1284 (May 30) 1947. **Partial Index**

Studies on Anesthesia in U. S. A. O. Friberg.—p. 1241.

Hospitalstidende

Renal Reabsorption of Glucose. Agnete Bræstrup.—p. 1249.

Norsk Magasin for Lægevidenskapen

Transient Lung Infiltrations with Eosinophilia: Case with Marked Tendency to Recurrence. K. Bie.—p. 1253.
Tuberculous Pleurisy. C. M. Sinding-Larsen and O. Heldaas.—p. 1255.
Two Staphylococcus Aureus Strains Resistant to Penicillin. L. O. Borgen.—p. 1259.

Medicinsk Revue

*Primary Dysmenorrhea Treated with Dilation of Neck of Uterus and with Sympathectomy: After-Examination of 195 Patients. K. Knutsen.—p. 1261.

Hygiea

Asphyxia in New-Born. Y. Åkerrén.—p. 1269.

Primary Dysmenorrhea Treated with Dilation of Neck of Uterus and with Sympathectomy.—Knutsen states that dilation of the neck of the uterus with Løvset's dilator is safe. Good results were obtained for over a year in about 50 per cent of the 125 patients treated; eliminating as far as possible the effect of pregnancy on the dysmenorrhea, the results were good in 46 per cent. They were about the same in patients with infantile uterus and with uterus of normal size. Resection of the superior hypogastric plexus is accompanied by the same risk as other laparotomies and should be carried out only in grave and stubborn cases of primary dysmenorrhea in which other safe methods of treatment, particularly dilation of the cervix, have been tried or in which laparotomy is indicated for other reasons. Typical uterine dysmenorrhea lends itself to this treatment. Of 75 patients treated by this method 1 died postoperatively. Of the 70 followed up, sympathectomy alone was done in 44 and sympathectomy with correction of minor pelvic abnormalities in 26, with good results in 84 and 92 per cent, respectively. The failures are attributed to incomplete resection. Examination of the resected tissue should be made; while the presence of nervous tissue does not guarantee complete resection, its absence indicates the need for further resection. Pregnancy and delivery are not unfavorably affected by the resection.

Practitioner, London

159:1-82 (July) 1947. **Partial Index**

Breech Presentations. A. Brews.—p. 11.
Placenta Previa. T. N. A. Jeffcoate.—p. 15.
The Puerperium. J. H. Peel.—p. 29.
Care of the Newborn. F. M. B. Allen.—p. 33.
Heat Spots and Summer Eruptions. J. T. Ingram.—p. 44.

Semaine des Hôpitaux de Paris

23:1601-1636 (July 7) 1947

*Puncture of Spleen and Punctures of Various Hematopoietic Centers in Study of Splenomegaly from Medical and Surgical Point of View. P. E. Weil and Suzanne Perlès.—p. 1601.
*Rupture of Lymph Nodes Into Trachea and Into Bronchi. L. Justin-Besançon, M. Lamy, Miss M. L. Jammet, J. M. Lemoine and P. Y. Paley.—p. 1602.
Vitamin A and Hypervitaminosis D. Suzanne Dreyfus-Neumann.—p. 1617.

Puncture of Spleen and Coupled Punctures.—According to Weil and Perlès splenopathy is not always associated with definite alterations in the blood and the bone marrow. In such cases punctures of the spleen, the liver and the bone marrow will be of considerable aid in diagnosis. There are other cases for which the term cryptopathology of the spleen has been suggested, such as lymphatic leukosis with a normal or subnormal blood picture, or rare cases of myelogenous leukosis without changes in the blood. Splenic puncture will be of definite help and other punctures will reveal whether or not the liver and the bone marrow are taking part in the neoplasia. Splenic puncture may clarify the diagnosis in cases of chronic cryptoerythroblastosis. In Gaucher's and in Niemann-Pick's disease puncture of the liver and the bone marrow may reveal involvement of their parenchyma with tumor cells. Combined punctures in splenomegaly associated with kala-azar and malaria demonstrate that disease of the spleen presents only one aspect of a more important involvement of the reticuloendothelial system. Splenic puncture will help the surgeon to decide whether or not splenectomy is indicated. Twenty-four hours of rest in bed with ice applied to the abdomen should always precede splenic or hepatic puncture. Combined subcutaneous injections of epinephrine and ephedrine five minutes before the puncture are recommended for patients with a mild tendency to hemorrhage and additional subcutaneous injections of 5 to 10 cc. of blood to patients in whom this tendency is more definite. To prevent severe unexpected hemorrhage, splenic puncture should be adopted in addition to coagulation tests as a routine measure.

Lymph Nodes Perforating Into Trachea and Bronchi.—According to Justin-Besançon and his co-workers bronchoscopic examination has demonstrated that tuberculous lymph nodes may perforate into the trachea and the bronchi and that the consequence of such perforation may often be less grave than was formerly believed. Perforation of primary infection of the lymph nodes in children and in adults must be distinguished from that of adenopathy due to reinfection or calcification of lymph nodes. These conditions differ from one another with regard to prognosis, manifestations and incidence. Dissemination over the subjacent pulmonary parenchyma is the principal danger associated with perforation of lymph nodes. Its occurrence is far from being a rule. It is usually associated with deposition of liquid caseous material which contains a large number of Koch's bacilli. Fatal hemoptysis may occur in adults from perforation of lymph nodes into a bronchus with an adherent diverticulum of the esophagus or from ulceration into large mediastinal vessels. The passage of small concretions from the calcified lymph nodes into the trachea and the bronchi as the cause of mild and unspecific inflammatory changes should be taken into consideration to avoid an erroneous diagnosis of bronchopulmonary suppuration or cancer of the lungs.

Book Notices

Recent Advances in Clinical Pathology. By Various Authors. General Editor: S. C. Dyke, D.M., F.R.C.P. Section Editors: Bacteriology, R. Cruickshank, M.D., F.R.C.P.; Biochemistry, E. N. Allott, B.Sc., B.M., B.Ch.; Haematology and Cytology, B. L. Della Vida, M.D.; Histology, A. H. T. Robb-Smith, M.D. Produced Under the Auspices of the European Association of Clinical Pathologists. Fabrikoid. Price, $5.50. Pp. 468, with 53 illustrations. Blakiston Company, 1012 Walnut St., Philadelphia 5; Spottiswoode, Ballantyne & Co., Ltd., 1 New-Street Sq., London, E. C. 4, [1947].

This volume is a collaborative effort of forty-one pathologists, mostly British, some from various European countries who found refuge in England from persecution in their native lands. Dyke, the editor, pays tribute to these refugees for their contributions to building up the British service in clinical pathology during the war. The gathering of pathologists from the entire continent led to the formation of the European Association of Clinical Pathologists. When the time seemed near that those who came from abroad might be able to return to their homes, the publication of this book was decided to put on record "the present state in Great Britain of the knowledge and practice of Clinical Pathology." The text is divided into four main sections: bacteriology, biochemistry, hematology and cytology, and histology. Each of the chapters deals with subjects in which important recent advances have been made. They include enteric infections, typhus fever, sore throat, primary atypical pneumonia, pertussis, tuberculosis, brucellosis, anaerobic, staphylococcic, leptrospiral and venereal infections, classification of streptococci, laboratory control of chemotherapy, liver function tests, prothrombin time, gastrointestinal diseases, Addison's disease, nutritional deficiencies, sulfonamides, photoelectric colorimeters, and micromethods of blood analysis, hematologic nomenclature, the myelogram, sedimentation rate, pernicious anemia, semen, sputum, pleural fluid, aspiration biopsy, cell counts in serial biopsies of carcinoma, biopsy of lymph nodes, testes, endometrium, skin and peripheral nerves, wet film technic in neurosurgery, clinical and postmortem pathology of encephalitis, and modern histologic technics. Each chapter is a separate and independent unit. The presentation is lucid. Dr. Dyke is to be complimented for a fine editorial job, not an easy accomplishment in view of the heterogeneity of material in a small volume dealing with forty-one subjects by the same number of authors. Physicians in all specialties will find in this book a great deal of valuable information.

Medical Jurisprudence. By W. F. Rhodes, B.A., M.B., Ch.B., Government Pathologist, Union Health Department, Cape Town, I. Gordon, M.B., Ch.B., Senior Assistant Government Pathologist, Union Health Department, Cape Town, and R. Turner, M.B., Ch.B., D.P.H., Special Serologist, Union Health Department, Cape Town. With additional contributions by Prof. M. R. Drennan and others. Foreword by the Hon. Mr. Justice H. S. Van Zijl. Second edition. Cloth. Price, 32s. 6d. Pp. 512, with 77 illustrations. Cape Town: Published for the Post-Graduate Press by the Stewart Printing Co. (Pty.) Ltd., 1945.

This edition of a book first published in 1942 deals with medical jurisprudence in South African criminal law. It is designed to serve as a practical manual to students, district surgeons and others of that country concerned with medicolegal problems. The authors have collected in it the statutory provisions which are of especial importance to medical practitioners. Several new chapters have been added in this edition, including one on identity, one on the medicolegal aspects of mental illness and another on the medicolegal aspects of workmen's compensation. New sections have also been added relating to the constitution and functions of the South African Medical Council, the registration and certification of births and deaths, and the keeping and sale of poisons and habit forming drugs.

Home Guidance for Young Children: A Parent's Handbook. By Grace Langdon [Grace Langdon Ackerman]. Second edition. Cloth. Price, $4. Pp. 357, with illustrations. John Day Co., Inc., 121 6th Ave., New York 13, 1946.

This complete revision of the edition published in 1931 is intended primarily as a handbook and reference for parents on the care and training of the infant and young child. All aspects of the child's growth and development are treated in detail. The material is divided into nine basic units, including the prenatal period, the first twelve or fifteen months, eating, sleep and rest, toileting, play, living with other people, school days and summary. Each topic is divided into sections dealing with the common problems encountered in the guidance of children. A list of suggested references at the end of each chapter provides for supplementary reading. Practical suggestions for preventing difficulties which may be associated with child development are offered and methods of dealing with those that do occur are described. All the activities of the child are regarded as a part of learning, with emphasis placed on intelligent utilization of the child's experiences to promote normal social, physical and mental growth. While not discarding time tested information, a sensible point of view in relation to implications which may be drawn from recent studies in child growth and development is presented. The author points out that reasonable parents will be honest and positive in their approach to the problems of their children. They will enjoy parenthood through careful study of the child as an individual who deserves real respect as well as love and security. The book is essentially of manual type with a style not unlike that of college textbooks. It is well organized and printed but could with profit include more of the excellent illustrations found in the section on "the first twelve or fifteen months."

P-Q-R-S-T: A Guide to Electrocardiogram Interpretation. By Joseph E. F. Riseman, M.D., Associate in Medicine, Harvard Medical School, Boston, Massachusetts. Second edition. Cloth. Price, $3.50. Pp. 84, with 31 illustrations. Macmillan Company, 60 Fifth Ave., New York 11, 1947.

The demand for a simple presentation of electrocardiography suitable for the beginner has led to the publication of a number of compends. The present volume, which has gone into a second edition within three years, is among the best. Of course it has all the faults, as the author recognizes, that come with an attempt to condense a large mass of data into a small space. The text is illustrated with diagrams, some of which are inaccurate, e. g. that on auricular flutter on page 19, that on digitalis T waves on page 41 and the chest lead of left and right heart strain on page 55. It is regrettable that the author suggests that the electrocardiogram may be taken on a seated patient. It is an error to consider that an ST depression of any extent in the chest leads is normal; it is also an error to consider that premature beats of the sinus node are frequent and that the voltage of T is significantly influenced by the strength of the heart beat. The illustrative electrocardiograms used at the end of the text lose some of their value because of their sharp reduction. Case 16A is an instance of almost complete auriculoventricular block and shows no premature systoles. This record is much too complex for an introductory textbook. The term "slight bundle branch block," as stated for example in case 9, is not to be recommended. It is regrettable that the author does not promulgate the use of multiple chest leads to a greater extent. It appears that he has much less experience with them than with the limb leads. Several features are to be commended, viz. the glossary at the end, the hints on errors which might readily occur in taking electrocardiograms and the diagrams relating the several electrocardiographic deflections with the status of the heart at the time. On the whole, the booklet is recommended.

The Psychoanalytic Study of the Child. Volume II. 1946. An Annual. Managing editors: Anna Freud, Heinz Hartmann, M.D., and Ernst Kris, Ph.D., Cloth. Price, $7.50. Pp. 424. International Universities Press, 227 W. 13th St., New York 11, 1947.

This volume of the annual has five sections devoted respectively to problems of child development, clinical problems, guidance work, problems of education and sociology and history of child psychiatry. Although the annual is written for dynamically trained psychiatrists, this volume contains papers which will be of interest to many physicians who recognize the importance of psychologic and psychiatric difficulties in the child. Pediatricians will find many of the clinical papers rewarding. Anna Freud's contribution "The Psychoanalytic Study of Infantile Feeding Disturbances" is a simple and lucid presentation, which would be intelligible to any pediatrician and contains many helpful suggestions concerning the management of feeding difficulties in infants. The chapter by Dr. Margaret W. Gerard on "The Psychogenic Tic in Ego Development" has

fascinating, well presented clinical material which throws light on the genesis of psychosomatic symptoms by a psychologically traumatic experience. Dr. Phyllis Blanchard's contributions to the "Problems of Reading Disabilities" and Dr. Elizabeth R. Geleerd's "Psychoses in Childhood" will be interesting reading for the pediatrician. The other sections of the annual are concerned with more theoretical problems. The chapters on "Twins" by Dorothy T. Burlingham and "The Child's Laughter" by Edith Jacobson are worth the reader's attention. Pediatricians, educators, psychologists and social workers will all find in this annual clinical and theoretical formulations which will enlarge and can be integrated into their own special fields.

L'anesthésie intra-veineuse au pentothal-sodium. Par Ernest Kern. Préface de R. Merle d'Aubigné. Paper. Price, 100 francs. Pp. 93. Masson & Cie. 120 Boulevard Saint-Germain, Paris 6e, 1946.

This monograph surveys the present status of pentothal sodium for surgical anesthesia. The author became interested in the qualities of the drug while serving with the Allies during the war. His experience covered more than 3,000 persons wounded in battle to whom pentothal sodium was administered. Increasing use of this agent in civilian practice convinces the author that pentothal sodium is a valuable addition to the armamentarium of the French anesthetist. A short history of the intravenous use of barbiturates is given. The physical and chemical properties of pentothal sodium are discussed briefly. A short chapter covers the physiologic effect of the drug. A chapter is given over to the discussion of the complications which follow the use or misuse of pentothal sodium. Two cases are reported in detail. Treatment of complications during or following the use of pentothal sodium is discussed in the same chapter. The clinical uses of pentothal sodium, with suggestions about premedication, dosage and use of oxygen are the subjects of a short chapter. One case is reported. A longer chapter gives the various technics by which pentothal sodium may be used. One case is recorded in which respiratory arrest was overcome with artificial respiration and oxygen insufflation. Greater detail regarding accidents and dosage is included in this chapter. Various combinations of pentothal sodium and inhalation anesthetics are outlined, with a precautionary paragraph on the danger of combining chloroform and pentothal sodium. About a third of the book is given to the discussion of the contraindications for the use of pentothal sodium. Thirty-six cases are reported to illustrate various subjects in this chapter. A comparison of pentothal sodium and hexobarbital soluble (evipal sodium) concludes the text. A short bibliography of references written in French on the subject is followed by a short bibliography of references in English. The book contains no index. Much material is presented in concise form.

School Health Problems. By Laurence B. Chenoweth, A.B., M.D., Professor of Hygiene, University of Cincinnati, and Theodore K. Selkirk, A.B., M.D., Assistant Professor of Clinical Pediatrics, College of Medicine, University of Cincinnati. With an Outline on School Health Administration. By Richard Arthur Bolt, M.D., Dr.P.H. Third edition. Cloth. Price, $3. Pp. 419, with 116 illustrations. F. S. Crofts & Co., 101 5th Ave., New York 3, 1947.

Though the same general plan has been followed in this edition as in the previous editions of this useful little volume, all the material has obviously been thoroughly revised and brought up to date. Both sides of controversial issues are fairly represented, and the reader is permitted to make his own choice. The thesis that "the major objective of all medical service in the school is educational" is presented and well supported. Though the reader might be inclined to question the author's acceptance of foot baths for controlling ringworm infection of the feet and to have some reservations as to the recommendations related to schoolroom illumination, he finds the answers here suggested for school health problems to be generally sound, well considered and in line with the best of modern medical thought. The illustrations leave something to be desired, and the explanation of the Wetzel grid method for evaluating physical fitness is definitely not clear. In general, however, the facts are represented accurately, interestingly and fairly, and the volume is highly recommended for all physicians doing any work in the schools.

Vascular Disorders of the Limbs Described for Practitioners and Students. By Sir Thomas Lewis, C.B.E., F.R.S., M.D., Physician in Charge of Department of Clinical Research, University College Hospital, London. Second edition. Cloth. Price, $2.25. Pp. 118, with 5 illustrations. Macmillan & Co., Ltd., 60 Fifth Ave., New York 11; 10 St. Martin's St., Leicester Sq., London, W. C. 2, 1946.

This volume, by a recognized authority on the physiology of the peripheral circulation, is not a complete treatise on peripheral vascular diseases. Conspicuous by its absence is consideration of such diseases as venous thrombosis, aneurysm and periarteritis nodosa. The anticoagulants heparin and dicumarol are not discussed. In general, clinical description of diseases is brief and inadequate. Treatment is lightly presented. As an example, one page is devoted to the treatment of arterial embolism and thrombosis; about three fourths of this is discussion of embolectomy. There is no bibliography or photographs. Because of these deficiencies the book has no great value for practitioners; the title is somewhat deceptive. However, the volume has great value for the student and the curious; it is essentially a consideration of physiology. There is excellent presentation of the causes of various colors of the skin which are circulatory in origin. The effects of arrest of arterial circulation are discussed thoroughly. The chapters on vasoconstriction, local arterial spasm, Raynaud's disease, Raynaud's phenomenon and vasodilatation will be helpful to the student of physiologic disturbances of the peripheral circulation. The volume is highly recommended from the point of view of presentation of fundamental studies in physiology by the author and his students.

A Program for Hospitals of the Pittsburgh Area Based on a Study of Voluntary Hospitals in Allegheny County and Adjacent Counties. By Abraham Oseroff. Sponsored by the Hospital Council of Western Pennsylvania. Paper. Pp. 38, with 2 illustrations. The Council, 814 Farmers Bank Bldg., Pittsburgh 22, 1947.

This pamphlet summarizes a study of the voluntary hospitals in a ten county area surrounding the metropolitan center of Pittsburgh. The survey, sponsored by the Hospital Council of Western Pennsylvania, is concerned mainly with hospital needs, the distribution of existing facilities, the financial picture of hospitals in this area, the current program of hospital activities and estimates of future expansions in the scope of hospital service. It is anticipated that a further report will be made on a larger study that has been carried out on all voluntary hospitals in western Pennsylvania.

Trauma in Internal Diseases: With Consideration of Experimental Pathology and Medicolegal Aspects. By Rudolf A. Stern, M.D. Foreword by Francis Carter Wood, M.D., Director of Laboratories and Radiotherapy Department, St. Luke's Hospital, New York. Cloth. Price, $6.75. Pp. 575. Grune & Stratton, 443 Fourth Ave., New York 16, 1945.

The author has assembled a series of case histories, some with exhaustive postmortem findings, reflecting the causal relationship or lack of such relationship between nonperforating trauma and internal diseases. The scientific literature is subjected to a critical review, and there is presented a description of experimental work which has either confirmed or refuted the assumption of trauma as an etiologic factor for many internal diseases. The book should be of aid to physicians in the medical evaluation of cases that involve disability or compensation claims based on internal lesions due directly or indirectly to extrinsic injury.

Health Facts for College Students: A Textbook of Individual and Community Health. By Maude Lee Etheredge, M.D., D.P.H. Fifth edition. Cloth. Price, $2.50. Pp. 439, with 75 illustrations. W. B. Saunders Co., West Washington Square, Philadelphia 5, 1947.

This edition is interestingly written and well organized. The text appears to be up to date in every respect. Though the table of contents would seem to indicate a rather limited inclusion of materials on community health, much of such material has been integrated throughout the volume.

Adding to the usefulness of the book are the questions for class discussion at the end of each chapter and the bibliography and film bibliography at the end of the book. The illustrations are adequate but are not quite up to the general excellence of the text. The new edition should find wide acceptance among college teachers of hygiene.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

PREVALENCE OF VENEREAL DISEASES

To the Editor:—**Can you advise me, or can you refer me to publications containing statistics on the percentage of the total adult population in the United States who have or have had some form of venereal disease, together with breakdown of these figures, i. e., white persons and Negroes, males and females, age groups, forms of venereal disease, and percentages as to sections of the country as a whole. I should also like to know what the percentage of decline in the venereal disease rate is today as compared with the rate, say, of ten years ago.**

George J. Korby, M.D., Detroit.

ANSWER.—The percentage of the total adult population in the United States who have or have had some form of venereal disease is not definitely known. Morbidity reports for the several venereal diseases are unreliable for a number of reasons, chief among which are (1) the fact that many people with venereal disease, particularly gonorrhea, do not seek treatment and (2) physicians in private practice often do not submit morbidity reports on venereal disease patients because of social implications.

The best estimate available on the prevalence of venereal disease is limited to syphilis. Studies of selectees during the mobilization period prior to World War II together with earlier studies of other groups by the Public Health Service give the best information available. Most of these studies were published during the years 1938 to 1942 in THE JOURNAL and in *Venereal Disease Information*. Depending on the geographic location, from 2 to 5 per cent of the adult population of the country have syphilis at any one time; the average would probably be about 3 per cent. Acquired syphilis occurs two to three times as often in men as in women and is about two to eight times as common in the Negro as in the white person. It is interesting that in the Negro the availability of free clinics seems to have a direct influence on prevalence. Syphilis is most frequently acquired by women between the ages of 16 and 20 and by men between the ages of 21 and 25. The higher prevalence of syphilis, according to these studies, is in the Southeastern states and the states along the Mexican border.

Because of the lack of information on the prevalence of venereal disease there is only limited information available regarding the decline in venereal disease rates. For further information on this subject reference is made to chapter 14 of the book "The Control of Venereal Disease" by R. A. Vonderlehr and J. R. Heller Jr. published by Reynal and Hitchcock, New York, 1946.

BLOOD CALCIUM DETERMINATIONS

To the Editor:—**My laboratory is having great difficulty in getting accurate results with our blood calcium determinations. We are using the method of Roe and Kahn (*J. Biol. Chem.* 81:1 [Jan.] 1929). It is both time consuming and inaccurate. I would appreciate it if you could advise me on any other photoelectric determination or any other means which would simplify our procedures. The other laboratories in town are having similar difficulties, and some are refusing to make blood calcium tests for this reason.**

Albert I. Clark, M.D., Shreveport, La.

ANSWER.—Calcium determinations as performed in many clinical laboratories are not reliable, as any method requires the utmost care, with attention given to details of every step in the technic. A method that may be of interest to the inquirer is that of Sendroy (Sendroy, Julius, Jr.: Photoelectric Determination of Oxalic Acid and Calcium, and Its Application to Micro- and Ultramicroanalysis of Serum, *J. Biol. Chem.* **144**:243 [June] 1942). Calcium is directly precipitated as calcium oxalate and measured by the extent of its reduction of a constant amount of ceric sulfate. The author claims that the sensitive photoelectric technic of iodometry employed has an average error of ±2 per cent in the measurement of as little as 0.002 mg. of calcium or 0.02 mg. of serum.

In many laboratories the method that is still preferred is some modification of Tisdall's titration method, such as that of Clark and Collip (Clark, E. P., and Collip, J. B.: A Study of the Tisdall Method for the Determination of Blood Serum Calcium with a Suggested Modification, *ibid.*, **63**:461 [March] 1925).

PSORIASIS OF THE NAILS

To the Editor:—**I should like an evaluation of the forms of treatment for psoriasis of the fingernails. A man aged 32 has had a moderately severe psoriatic involvement of the fingernails for six years. The condition has become worse in the past eighteen months, so that now there is a constant, ugly appearance to three or four nails owing to cutting away the dead portions of the nails plus removal of the detritus and, in conjunction with the discoloration, looseness and sponginess of the ungual wall over the nail root. Do you think that this pink spongy tissue over the nail root might promote rheumatoid arthritis by serving as a chronic source of mild infection? The patient is a professional man and must meet many people each day. Please discuss the advisability of removing the severely affected nails, scraping the nail beds and wearing artificial nails. This would be a nuisance but may become necessary. X-ray therapy has not been used and does not seem to me to be advisable.**

M.D., California.

ANSWER.—The inquirer does not state whether the nails alone are involved or changes in the skin are present too. The diagnosis of psoriasis of the nails alone is often difficult to make with certainty. Other diseases must be considered. In acrodermatitis continua, changes in the skin begin near the nails and the latter may be involved early. There may be rheumatoid disorders of the small joints just as there may be in psoriasis, especially of the arthropathic variety. It is implied that in this patient there are rheumatoid symptoms. It is not necessary to assume that the pathologic tissue about the nail acts as a nidus for the dissemination of noxae to produce rheumatoid changes. There is no assurance that trimming away such tissue will contribute toward better, or in itself quicken, healing.

Psoriasis of the nails frequently resists all treatment, especially when they alone are involved. The simplest and most effective remedy is the use of x-rays. This form of physical therapy requires knowledge of its proper use, experience and utmost care to prevent harm. The method is most apt to improve the state of the periungual tissues. The use of reducing agents such as anthralin ointment and chrysarobin may be effective. They may be applied under finger cots. If the skin is involved too, it also must be treated. Attention only to the nails with neglect of psoriasis of the skin lead to poorer results and more frequent recurrences in those appendages. It is not advisable to resort to surgical methods until all others are exhausted. It is unusual to find that removal of the nails or scraping leads to any permanent improvement. Quick relapse is common.

UNILATERAL BREAST HYPERTROPHY

To the Editor:—**I have a patient aged 14, one of whose breasts is developing much more rapidly than the other. There is nothing to suggest tumor formation. How common is such a condition? Is there any method of treatment? What prognosis can be given as to the eventual comparative size of the two breasts?**

M.D., New York.

ANSWER.—Two separate conditions in early adolescence may be responsible for unequal development resulting in mammary asymmetry. The most common is known as "early ripening," or so-called adolescent mastitis. In this condition the hypersensitive breast develops earlier and to a greater degree than its fellow. Once regular menstruation is established and sexual maturity is reached, the overdeveloped breast usually regresses until the two breasts are approximately the same size. Early ripening is a relatively common condition and does not require treatment. The prognosis for eventual symmetry is good. A second cause of mammary asymmetry is unilateral virginal hypertrophy. This is a relative rare condition in which the larger breast grows until it reaches a giant or abnormal size, being twice or more the volume of the normal breast. There is no treatment for this unilateral virginal hypertrophy until the maximum size of growth has been reached. Then plastic operation is indicated to reduce the abnormality in size.

NERVE CRUSHING OPERATION FOR POLIOMYELITIC PARALYSIS

To the Editor.—**I am inquiring about the Billig-van Harreveld treatment for residual paralysis. As I understand it this treatment is given at the St. Luke's and Children's Medical Center, Philadelphia. Would you write me the details of this treatment? Is the treatment given at the University of Virginia Medical School?**

A. W. Graves V, M.D., Lacey Spring, Va.

ANSWER.—The Billig-van Harreveld procedure for treatment of infantile paralysis is a manual operation to interrupt the remaining intact motor nerve fibers of a paretic muscle. The success of such a procedure is based on the possibility that the interrupted nerve fibers will branch during regeneration, thereby providing an increased number of nerve fibers to innervate muscle cells.

This treatment is available at St. Luke's and Children's Medical Center, Philadelphia, and through Dr. Billig at Los Angeles.

According to a recent report (Billig, van Harreveld and Wiersma, 1946) a total of 3,305 muscles were subjected to this procedure. Of these, 1,766 (53 per cent) showed no improvement or actual deterioration, as compared with the preoperative condition, while 1,539 (47 per cent) gave an improved rating of rarely more than one step on the Lovett scale. The chance of improvement seems to have been greater in muscles with the least residual innervation. It has been reported, however, that patients subjected to this procedure are almost unanimous in reporting subjective improvement.

Objective studies, however, seem to indicate that the success of the operation is neither certain nor predictable. In fact, it would appear that the chances for a favorable response are no greater than those for an indifferent or unfavorable result, and that the improvement, even when definite, commonly remains of moderate extent. Further evaluations of this treatment based on electromyographic studies will soon be published.

"SEVEN-DAY CURE FOR ALCOHOLISM"

To the Editor:—A patient brought to my attention an article entitled "Seven-Day Cure for Alcoholism," which appeared in *Magazine Digest*, October 1947. Is there anything to this treatment?

Ira B. Bright, M.D., Greenwood, Miss.

ANSWER.—There is no "Seven-Day Cure for Alcoholism." The authors of this supposed-to-be cure do not themselves consider that the injection of alcohol into the veins will cure alcoholism, if one reads the article correctly; viz. "However, the treatment does not bring about a permanent cure unless the patient stops abusing alcoholic beverages. For, even though he is cured in a physical sense, he can again—just like anybody else—drink enough to bring back his craving and again become an alcoholic." Most workers feel that the first and other cases reported in the article are delirium tremens which are due to nutritional depletion. For years it has been known that these patients can be treated easily and rapidly by giving large doses of vitamin B_1 and insulin, together with increasing the intake of salt and sugar.

The article may be misleading, for it states in addition: "For this reason, any mental factor—such as a feeling of inadequacy, a desire to escape from worry—which may have caused excessive drinking in the first place should be cleared up." This has been generally known for many decades.

The article mentioned brings out the point of a possible desensitization of the patient to alcohol, which is brought about by its intravenous injection. This possibility perhaps deserves further study.

SUBACUTE LEUKEMIA

To the Editor:—A man aged 50, a painter, has aleukemic leukemia. The diagnosis was established by sternal biopsy. The red blood cells number 2,450,000, hemoglobin is 45 per cent and white blood cells number 9,000 with 70 per cent large mononuclear cells. The platelets are greatly reduced. I should like to know what therapy can be recommended during this stage and, if and when this case changes to a typical lymphatic leukemia, what radioactive therapy is recommended and where it can be secured.

Harris A. Weisse, M.D., Plymouth, Wis.

ANSWER.—This patient probably has subacute leukemia. The total leukocyte count is commonly within normal limits in such cases; leukocytosis may occur as the disease progresses. There is no effective treatment for subacute leukemia either when the leukocyte count is normal or when it is elevated. It is generally agreed that x-ray therapy or radioactive phosphorus is contraindicated in acute and subacute forms of leukemia. Temporary improvement is often obtained with blood transfusions.

PLASTIC ARTIFICIAL EYE

To the Editor:—For many years a women has had to wear an artificial eye. A new one has been made for her every year or so in New York City. Before the end of a year the eye becomes quite irritating to the socket. I understand that a newer plastic eye is being made which is nonirritating, lasts much longer and can be kept in the socket for long periods. But none of my colleagues here can tell me where such an eye can be obtained.

M.D., New Jersey.

ANSWER.—In all the larger cities, including New York and Philadelphia, the new plastic artificial eye is available and in many places may be actually molded and colored to match the other globe. In addition, throughout the country blanks of the plastic iris are in the hands of optical dealers, who, after matching, send the plastic iris to larger centers, where the measured sclera is fitted and returned to the optician. The New York dealer should be able to supply this type of artificial eye.

REMOVAL OF SILVER STAINS

To the Editor:—A 12 year old boy has had a deep bluish brown stain covering one lower eyelid, staining out on to the cheek, due to injection of mild silver protein into the lacrimal sac in early childhood. This has been treated with a mixture of 1 per cent potassium ferric cyanide with 6 per cent sodium thiosulfate, according to the method of Stillians and Lawless (The Journal, Jan. 5, 1929, p. 20) without success. Can you give me information on any more recent work on removal of silver stains or will you recommend further therapy in this case.

John H. Kennard, M.D., Manchester, N. H.

ANSWER.—As far as is known, there is no new method for removing silver stains. Some dermatologists have seen cases in which there has been gradual spontaneous improvement. If active therapy is desired or demanded, continuation of the same treatment is the only method which can be advised. The removal of metallic silver from the skin is bound to be slow by any method.

QUININE AND DEAFNESS

To the Editor:—A patient stated that she took an overdose of quinine for several days in an effort to bring on an abortion about fifteen years ago. Since then she has developed partial deafness, and I am wondering whether the quinine was a causative factor in her ear condition. How much quinine per day would it be necessary for one to take to damage hearing or is the quinine not likely to be a factor in circumstances such as described?

M.D., California.

ANSWER.—Impaired hearing from quinine is generally in proportion to the amount of the drug taken, but idiosyncrasies play an important part. One person may have tinnitus and a temporary loss of hearing on comparatively small doses, while another will tolerate large doses without ear symptoms. Deafness from quinine always dates from the taking of the drug—when the drug is discontinued there is a partial or complete recovery in the hearing. If recovery is only partial, the difficulty then remains stationary without further loss. Therefore impaired hearing from quinine is always of the perceptive type. It is possible that this patient's deafness was caused by the overdose of quinine, provided the history is as described and the deafness is of the perceptive type.

DIPHTHERIA ANTITOXIN

To the Editor:—Reference is made to your reply to the query of Dr. J. T. Millington *re* the use of diphtheria antitoxin, page 840, issue of June 28, 1947. You state that "when diphtheria antitoxin is used for remedial purposes, a definite diagnosis of diphtheria should be established only by laboratory procedures. Even when the culture is positive for diphtheria it may be advisable to make a test for virulence." The statement is correct provided it is interpreted properly, i. e. that the clinical diagnosis of diphtheria needs confirmation by laboratory methods. However, I fear that it may be interpreted to mean that diphtheria antitoxin should not be administered until laboratory confirmation of the diagnosis has been secured. Such lack of action is dangerous. I have seen far too many records of fatalities from diphtheria due to failure to administer antitoxin at the earliest possible moment. Although appropriate cultural material should be submitted to the laboratory at once, the safe doctrine is to administer antitoxin if a case is suspected to be one of diphtheria. Provided proper tests for serum sensitivity have been made, no damage will result from giving diphtheria antitoxin to a patient who subsequently may be found not to have had diphtheria, whereas vast harm may result to the patient who has that disease if antitoxin is withheld. The longer the delay, the greater the danger.

E. H. Marsh, M.D., Deputy Commissioner of Health, White Plains, N. Y.

AMEBIASIS

To the Editor:—In the answer to the question on amebiasis in the August 30 Queries and Minor Notes, p. 1577, I read that the symptomatology (slight griping abdominal tenderness, slight liver tenderness, malaise and lassitude not associated with anemia, fever or other causes) is compatible, but not diagnostic of amebiasis. I concur with the statement but would like to stress that this symptomatology is highly suggestive of amebiasis and that careful study is required to establish or rule out this diagnosis.

In a study of cases of amebiasis seen at two Naval stations in 1943 and 1944 I found these symptoms to be present in most instances. In many cases these were the only symptoms.

While the diagnosis is dependent on finding the causative organism, I believe that in inexperienced hands, as well as in many hospitals, stool examinations are often unsatisfactory and when relied on result frequently in missing the diagnosis of amebiasis. A simple method is available, which should be used in all suspected cases. This is the proctoscope. In most cases of intestinal amebiasis ulcers will be found in the lower rectum and along the edges of the valves of Houston. Microscopic studies of fresh scrapings from these ulcers will reveal the ameba. I believe that more frequent use of the proctoscope will result in a higher number of accurately diagnosed cases of amebiasis.

Leon J. Taubenhaus, M.D., Houston, Texas.